

SIERRA CLUB BULLETIN.

VOL. V.

SAN FRANCISCO, JANUARY, 1905.

NO. 3.

FIRST ASCENT: MT. HUMPHREYS.

By J. S. HUTCHINSON, JR.

Untrodden summits in the Sierra are now very scarce, and the sight of one gives every mountain-climber a thrill of excitement such as comes from no other source. It was such a feeling that came to me in midsummer, 1903, when with Messrs. J. N. Le Conte and J. K. Moffitt, on the North Palisade, we looked far to the northwest across the Goddard Divide and saw looming in the distance, entirely isolated, the rugged, spiry, and unscaled summit of Mt. Humphreys, its eastern and western sides falling in precipices and steep slopes until hidden by the intervening ridge; its whole aspect one of defiance. The fascination of that mountain increased as Mr. Le Conte told us of the attempt which he and Mr. Cory made to reach its summit in 1898.*

Nor was it the unscaled summit of Mt. Humphreys alone that attracted us. We were looking into a rough and rugged wilderness of peaks which "may well be called the heart of the High Sierra," where "the peculiarly savage type of High Sierra scenery seems to reach its culmination,"* "the finest portion of the crest

* See Mr. J. N. Le Conte's article, "The Basin of the South Fork of the San Joaquin River," SIERRA CLUB BULLETIN, Vol. II, p. 249.

of the Sierra Nevada Mountains,—their scenic culmination, their final triumph.”* If this region was the heart of the High Sierra, then, in truth, the very center of this heart was Mt. Humphreys. Judged from a mountaineering standpoint, it was indeed a most promising country into which we were looking.

As a result of this glimpse into that promised land, the following summer (July 11, 1904) found a party of four—Dr. Charles A. Noble, Mr. Albert W. Whitney, my brother, E. C. Hutchinson, and myself—camped in Lost Valley, or Blaney Meadows, as it is called, on the South Fork of the San Joaquin River. Hither we had come from San Francisco by the most direct route (via Fresno, Shaver Lake, and the Red Mountain Trail). We were bound for Mt. Humphreys.†

Lost Valley is an ideal spot for a permanent camp. It is one of the most beautiful of our high mountain valleys (elevation, 7,650 feet). The meadows are fine; the river broad and majestic; the glaciated cliffs tower high above and almost completely surround the valley. For two days we camped on the west bank of the river. During this time we reconnoitered to the eastward, toward Mt. Humphreys.

Four miles up the cañon of the South Fork, above Lost Valley, a stream comes in from the northeast. This is known to the sheepmen as the “North Branch of the

* See Mr. Theodore S. Solomons' article, “A Search for a High Mountain Route,” *SIERRA CLUB BULLETIN*, Vol. I, p. 230.

† The mountain was named, in 1864, by the California Geological Survey party under Professor Brewer, and the name first appears on their map made that year. It also appears on a map entitled “Part of California and Southern Nevada,” Sheet No. 65, Geographical Explorations and Surveys west of the 100th Meridian, Expedition of 1871, under command of First Lieutenant Geo. M. Wheeler, Corps of Engineers, under the direction of Brigadier-General A. A. Humphreys, U. S. Army, and on the “Topographical Map of Central California,” 1873, J. D. Whitney, Geologist. On these maps, the name is “Humphreys' Peak.”

South Fork of the San Joaquin River." It heads at the main crest of the Sierra very near Piute Pass, just south of Mt. Humphreys. From there, after flowing northwesterly for about six miles, it turns abruptly southwesterly and flows five miles into the South Fork. As the name by which this stream is known to the sheepmen is so unsatisfactory, Mr. Le Conte, on his map which is published in this number of the *BULLETIN*, has changed the name to "Piute Branch," and I shall refer to it hereafter by this new name. Noble and I explored almost to the source of the Piute Branch to determine if our "jacks" could be taken to the base of Mt. Humphreys. We found that it would be possible to do so by traveling on a terribly rough sheep-trail which starts out eastward from Lost Valley, climbs the ridge bounding the South Fork on the east, and follows this ridge southward until it plunges down into the cañon of the Piute Branch; from there on it follows first the north and then the northeast side of the stream to Piute Pass.

On the third day after reaching Lost Valley we moved our camp across the river, fording at a place where the stream was widest and least rocky; but even here the water came high up on the sides of the packs and the animals had great difficulty in keeping their footing on the rough bottom. By the use of long ropes a crossing was made in safety. Here we camped in a grove of cottonwoods, in the midst of a luxuriant garden of lupines, columbines, and alpine lilies. In the middle of the afternoon we were surprised and delighted to have Mr. Le Conte drop into our camp. He and Dr. G. K. Gilbert, with their packer, Osceola Kanawyer, had arrived in the valley the night before, on their way southward from

Yosemite, and were camped half a mile below us. We were pleased to have them join us in our evening meal. While at dinner Dr. Gilbert discovered some perfect bear-marks scratched on the light-gray bark of the cottonwoods near by. Some were made by the bears thrusting their claws into the bark in the act of climbing; others were long parallel scratches made by the bears reaching up to full height and then scratching downward.

When Noble and I returned from our trip up the Piute Branch plans were made to take our jacks up that stream; but as soon, however, as the other party arrived, and we found that they would ascend Evolution Creek* (a stream which enters the South Fork from the east four miles south of the Piute Branch), we planned to accompany them up that stream, and then strike off toward Mt. Humphreys, taking our jacks with us as far as possible and knapsacking it the balance of the way.† This we did, accompanying our friends nearly to the Hermit, where we left them, and our party climbed up the northern wall of the cañon about a thousand feet, by an old steep sheep-trail. This trail brought us to a glacial shelf or plateau which projects out from the ridge which separates Evolution Creek from the Piute Branch. On this shelf are a number of little meadows and tiny lakes. There is one good-sized lake, half a mile long and about a quarter of a mile wide, situated on the very brink of the shelf. On the shores of this lake were patches of bunch-grass in sufficient quantity to supply

* Mr. Le Conte has described the trip from Lost Valley to the Hermit in an article which appears in this number of the BULLETIN. In his article he has given the name "Evolution Creek" to the stream, which heretofore has been called the "Middle Branch of the South Fork of the San Joaquin River,"—a very excellent change.

† For map showing our trail and route see Plate XXXIII, opposite page 229.

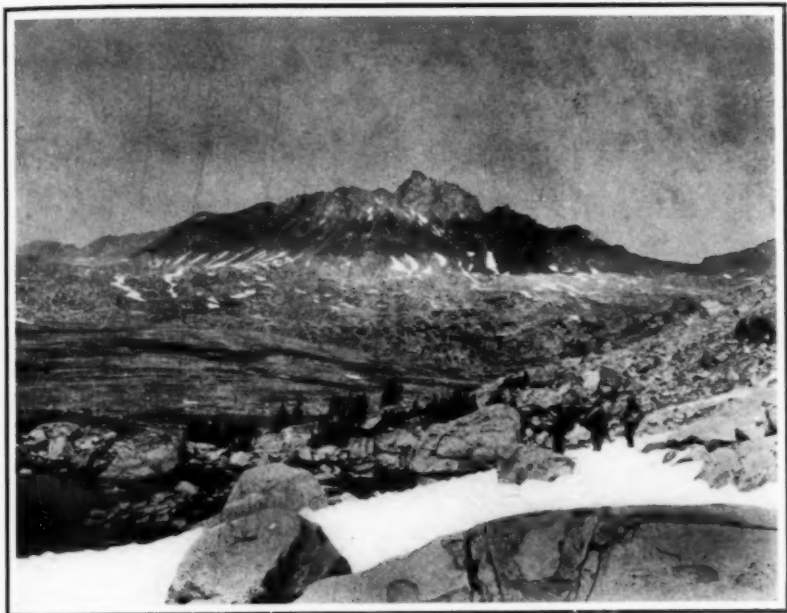
the jacks for three or four days, and a short distance off were a few straggling, storm-beaten, dwarf pines, which would serve as firewood. The margin of the lake was fringed with the exquisite alpine heather. Here we finally made our camp, at an elevation of about 11,100 feet. The region was destitute of all vegetation excepting the few trees, the grass, and the flowers. The water of the lake was as clear as crystal and of a deep bluish green color. The shore-line was a rocky wall, composed of large boulders. This is a feature characteristic of nearly all high mountain lakes which freeze solid in winter. When a lake of this sort freezes solid, the ice grasps firmly the boulders in the bottom; a thaw then comes, and the ice cracks. Later the cracks fill with water, and, in turn, this water freezes again. The expansion caused by the freezing of the water in the cracks causes the blocks of ice carrying the boulders to be pushed toward the shore, and in the course of many years all the boulders in the lake are deposited around its margin and built up into a kind of wall, projecting considerably above the surface of the water.

No sooner had we arrived at our camping-place than we were visited by numerous little birds of very beautiful plumage. They were about the size of an ordinary English sparrow. The head was of a light ashy color, the back a sooty black, the body a most beautiful cinnamon-brown, while the wings and tail feathers were blackish. A few of the feathers were slightly tipped with white. These birds were the gray-crowned finch, or *leucosticte*. They were very tame and inquisitive, and flitted from rock to rock near by and watched all our camping operations.

The view across the lake, and still farther across

the deep gorge of Evolution Creek, to the mountains bounding that cañon on the south was wonderful. The Hermit thrust its head high above the level of the lake. At times the water was slightly ruffled by the wind, but generally it was smooth and placid, and the reflection of the neighboring bluffs and peaks was perfect. The echoes from the cliffs were clear and distinct and repeated themselves over and over again. This lake was christened by Whitney "Lake Frances."

We made camp about 2 o'clock in the afternoon, and then Whitney and I went exploring up to the ridge lying between our camp and the great basin which bounds Mt. Humphreys on the west, to determine the best course to take on the following morning. Above us in the ridge was a depression, and leading up to it was a little valley. Our course took us up this valley and past numerous little snow-bound and ice-covered lakes and into some rocky talus. On our way up to the ridge we took careful notes, and came to the conclusion that it would be perfectly possible to take animals up as far as the talus slope. From there on it looked as though we could get animals up by building a trail in a few places. We were encouraged by the prospect, but when we reached the ridge all hope of ever getting animals over was shattered, for we stood upon the brink of an immense cirque, or amphitheater, filled with snow and ice, and immediately below us was a precipice of several hundred feet. Some one had been there before, for at this spot there was built a large monument of rough stones. This cirque was one of a chain of cirques which formed the northern face of the ridge. It would be impossible for any one to get across at this place, even without pack-animals, and

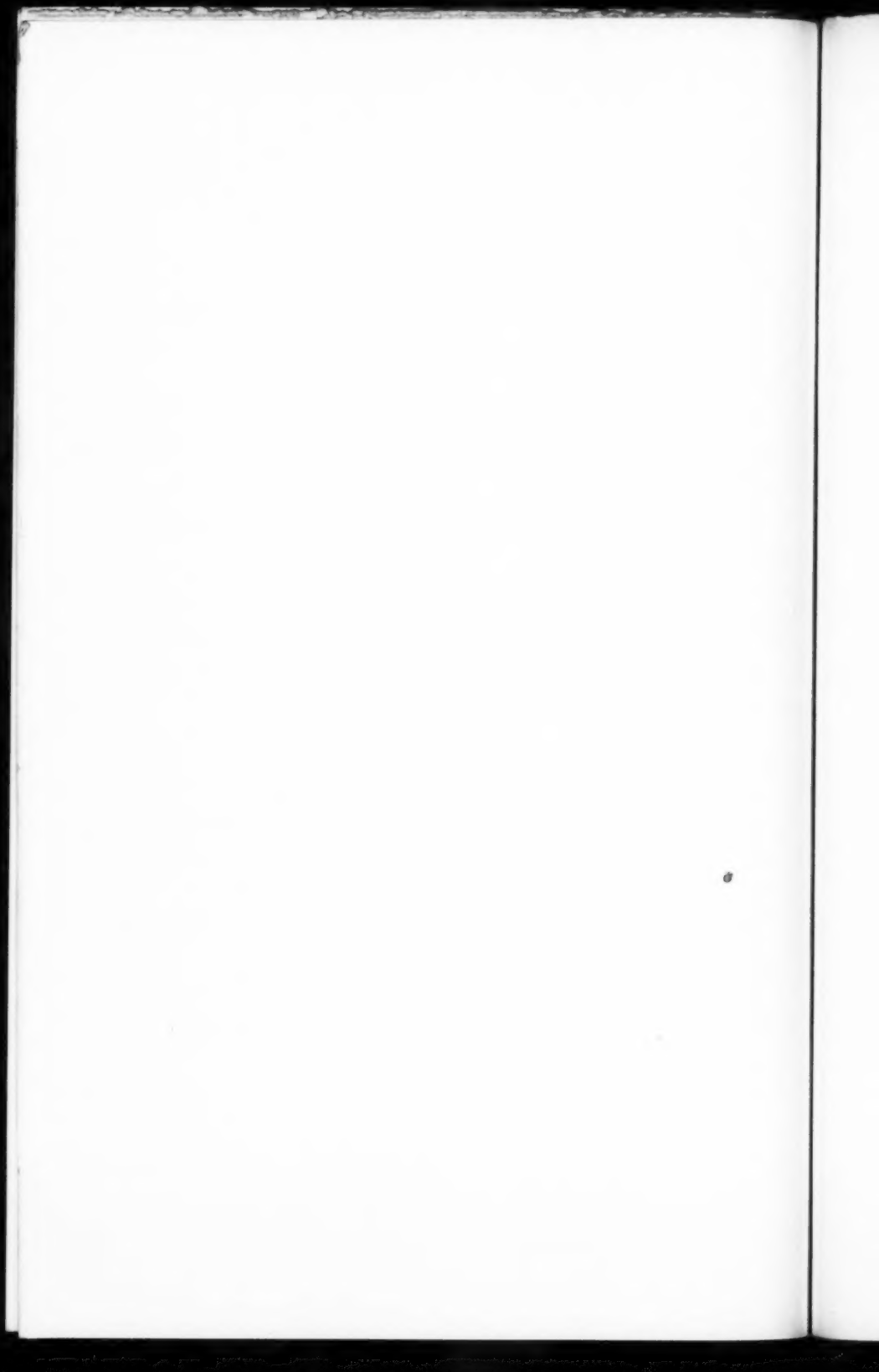


MT. HUMPHREYS FROM THE SOUTHWEST.



LAKE FRANCES (ALTITUDE, 11,100 FEET).

From photographs by J. S. Hutchinson, Jr., 1904.



so we explored along the ridge to the rim of the next cirque eastward. Before reaching this we had to ascend a small intervening peak, from the summit of which the whole Humphreys Basin was spread out before us. Such a fascinating scene of desolation I never expect to see again. Nothing but snow and lakes, tiny streams and foaming cascades, glacial erratics and granite bosses, and the whole surrounded by the jagged mountains, and there, alone in solitary grandeur, rose Mt. Humphreys, the king of all the peaks. From the summit of this small peak we skirted along the rim of the cirque for a possible pass, and the prospects were far from bright. However, when almost in despair, we discovered, dropping downward from the rim, a deep chimney. It sloped downward at a steep angle for perhaps six hundred feet, and was filled with a long tongue of snow, which was frozen on its surface. To the left of the chimney rose a high vertical wall, and alongside of the wall the snow had melted away, leaving a passage through which it was just possible for a man to squeeze. We tested this passageway and found that we were able to travel down it. We then retraced our steps hurriedly back to camp.

The next morning we were up very early and, after a hasty breakfast, we made an inventory of the provisions for our knapsack trip. The provisions consisted only of the most substantial and condensed food. We also took two small pails, a tin plate, four cups and four spoons, a fifty-foot rope, the ice-ax, and the camera. Besides these, each of us took a light feather sleeping-bag. We then cached all the balance of our camping outfit, covering all with rubber sheets. The jacks were tethered with long ropes where they could get feed

and water. These preparations having been completed, we followed up the little valley where Whitney and I had ascended the day before. The packs were heavy and we moved slowly, stopping frequently to rest. By 10 o'clock we reached the snow-tongue pass (about 12,200 feet), at the head of the snow-tongue which I have already mentioned. Taking off our sleeping-bag rolls, two of them were started down the snow-tongue. They bounded, plunged, and jumped furiously, and finally landed at the top of a rocky buttress which projected out at the foot of the snow-field six hundred feet below us. A third one was then started. Half-way down the slope it struck upon a rocky island which projected up through the snow and burst open like a sausage, scattering cans, bags of coffee, sugar, and sticks of chocolate in all directions over the snow. It was a difficult task to gather up the fragments, for the field was so steep and frozen that it was impossible to move on it without the use of the rope and ice-ax. On the shores of a little lake near the foot of the snow-tongue we stopped for a hasty lunch. This little lake is located in the bottom of the cirque into which we had descended, and for that reason we named it "Cirque Lake." The pass over which we had come we called "Snow-Tongue Pass."

Across the immense granite basin which bounds Mt. Humphreys on the west were seen several tiny groups of dwarf pine, in which a camp could be made, but upon reaching that place it was found that a high bluff rising behind completely shut off our view. As we wished to camp within full sight of the mountain, we decided to seek further. Whitney had gone exploring, and presently returned with the news that he had found

a good place, very much nearer the mountain. Following him, we were led to the place which he had selected. It was treeless, with the exception of the dead remains of an old pine near by, but it gave us a splendid view of the mountain. It is always cold in such High Sierra altitudes, and so our camp was located in a little flat-bottomed gully, protected by two walls of granite (elevation, 11,000 feet). Our evening meal was tapioca soup, fried ham, tea, and hardtack.

The sun was low in the western horizon, and his soft light brought out in fine bold relief every crack and crevice in the mighty mountain which arose high above us so near at hand. Long we gazed at it with the glasses to ascertain if there was any way to the summit. Two steep gorges appeared, one starting near the base of the mountain and running obliquely from left to right, striking the crest perhaps a quarter of a mile to the right of the summit; the other one starting in the first gorge, two thirds of the way up from the bottom, and running at right angles to the first obliquely from right to left. This second gorge disappeared behind a sort of buttress, itself a mere knife-edge, which ran out southerly from the main peak almost parallel with the crest. This second gorge was visible for half its length, and the balance of the way it was hidden in the deep shadows cast by the setting sun. Each time the glasses were put down it was with a remark to the effect that if it were at all possible to ascend from this side it could only be through the deep and narrow gorge which runs up the mountain face from right to left and disappears behind the buttress.

The sunset lights on the mountains are always the finest, far surpassing the lights of sunrise. As the sun

sinks there is a warm and mellow light cast on the whole landscape, and now the furrowed face of Humphreys looked particularly grand. The contrast of the high lights and the deep shadows was intense. All along the base of the mountain is a succession of talus slopes extending upward five hundred feet. This is of a light gray color, and is formed by the blocks of granite falling from the cliffs high above and sliding down numerous parallel chutes which lead to the top of the talus. The bottoms or floors of these chutes are worn smooth and almost polished by the streams of rock which have dashed through them. From the mouths of the chutes the talus slopes spread out in perfect cones. Above the talus, and extending all across the face of the mountain, is a chocolate-colored band, perhaps fifteen hundred feet in thickness, its upper edge scalloped and fluted like the teeth of a saw. Above this chocolate-colored band is the cap of the mountain, extending upward a thousand feet higher. This cap is of a terra-cotta color. The combination is peculiar and beautiful, and in the rays of the setting sun it was glorious.

The sun set behind the "Pinnacles," a ridge between us and the South Fork, and showed a long line of spires, spikes, blocks, and needles, side by side. The great snow-filled cirques across the cañon took on a vivid pink. The little lakes far below us and the tiny streams reflected the blush of sunset. The mountain shadows gradually faded and the twilight softly stole upon us. The moon, then at its first quarter, soon began to show her light. No sooner was the warm sun gone than the chill of evening settled down. Noble and my brother built a stone wall to protect us from any wind which might

blow on us from the west. Whitney made as large a camp-fire as our wood-pile would permit, and I prepared our lunch for the next day. We lit our pipes, sat in the warmth of the genial fire, discussed the day's doings, and took considerable "thought for the morrow," wondering what it "might bring forth." The day had been an energetic one; the morrow might be even more so; and at 8:30 we were ready for our beds.

Near midnight I began to realize that I was in a semi-conscious state, and presently awakened with chilly sensations, to find that I was doubled up, hugging myself in a vain effort to keep warm. The fire had burned down to a mass of glowing embers. I hastily arose to rebuild it. The moon had followed the sun and was just setting behind the western mountains. It cast an almost ghostly light over the snow-fields, which appeared like great white sheets laid over the bones of the mountains. The lakes were a mass of molten silver, and the glacial polish was burnished brass. Humphreys was a great black wall close at hand and of immense height. Overhead the myriads of stars twinkled brilliantly. There was no sound except the constant murmur of the little near-by rills. As I looked over this weird scene, from the setting moon to the millions of brilliant stars, and then across the glaciated basin to the snowy peaks, and finally to the great black wall of Humphreys, I felt as never before the force of the words, "The heavens declare the glory of God and the firmament showeth his handiwork." A cold wind had arisen, blowing down from the mountain and across the frozen lakes, bringing with it an unpleasant chill. I threw some logs on to the burning embers, crawled back into my sleeping-bag, and rolled

nearer the fire. Three more times during the night some one of us was up to renew the fire. Before long, "morn in the white wake of the morning star came furrowing all the orient with gold."

At 5 o'clock (July 18th) we were up and cooking our frugal morning repast of bacon and coffee, and by 5:30 had packed our lunch, shouldered rope, ice-ax, camera, and field-glasses, pocketed our Sierra Club register, and were on the march toward the mountain. The air was crisp and cold. The sun, although half an hour above the horizon, was hidden from us behind the mighty wall of Humphreys, which was silhouetted black, clear, and sharp against the blazing east,—every pinnacle, every blade, every jagged spur, every sawtooth clear-cut and sharp,—and above all fanlike rays of light shot up into the clear atmosphere. On we went over the granite basin, strewn with glacial erratics, past frozen lakes lying in glacial basins. Every lake had its floating ice and its field of snow. Whatever soil there was, was made soft and spongy by the ice crystals. The traveling was comparatively easy until the talus slope was reached. Here was a lake, larger than the rest, which had to be skirted. Once past this, the ascent of the talus was commenced. The rocks were small and piled so steep that they started with almost every step. Our course took us up this five hundred feet, to the mouth of the gorge which I have already mentioned as running diagonally up the mountain from left to right. Although we had examined the mountain so carefully from a distance, and had mapped out our proper course, yet when actually on its side it was impossible to tell which was the correct gorge. Noble, Whitney, and my brother worked up the steep chimney toward the

left, and finally came along a narrow horizontal shelf back to the main gorge, while I tried a chimney to the right, and then worked horizontally to the left, striking the main gorge at about the same elevation as the others. From here on the gorge was very steep and the rocky surface highly polished, either by snow-avalanches or boulders sliding over it. It was difficult traveling, and would have baffled us completely except for the cleavage-planes which ran diagonally across the polished slope.

After an hour of steep climbing we reached the gorge running at right angles to the one we were in. From this place Whitney continued up the first gorge to where it ran out at the knife-edge. On his return he reported that the eastern slope was a sheer polished precipice of several thousand feet. The second gorge, which we had just reached, was almost straight and sloped down to us at an angle of forty-five degrees. It was very narrow and V-shaped, the bottom scarcely ten feet wide. The right-hand wall, forming the knife-edge of the mountain, arose almost vertically above us, perhaps a thousand feet. The left-hand wall, which formed a sort of buttress, which I have already described as extending south from the summit, inclined somewhat from the perpendicular. This wall also was the merest knife-edge, with precipitous sides down to where it joined the main mass of the mountain near us.

The whole mountain—at least the cap of it for a thousand feet down—is composed of terra-cotta-colored granite, cracked and broken into huge blocks by the frost and ice. As we looked up the gorge we saw that the cleavage-planes all ran parallel and dipped down toward the east at an angle of sixty or seventy degrees.

On the cliff to our right were the places from which the huge cubes and parallelograms of granite had broken off, and in the bottom of the gorge were the fallen masses. The loosened blocks on the western wall, which was somewhat inclined, although cracked, broken, and misplaced, still remained approximately in their original positions.

After crossing a snow-field, which was frozen hard, a small shelf was reached, the last level place on the mountain, and from here commenced the final ascent of the gorge. Almost immediately we came upon the same large smooth, polished granite slope which had baffled Messrs. Le Conte and Cory. It formed the bottom of the gorge, and sloped upward for a distance of thirty feet as steep as a cathedral roof. To add to its difficulties, it was completely covered with a thin layer of ice, about a quarter of an inch thick. A single trial of walking on it was enough, for we immediately went tobogganing to its foot. We tried it on all fours, but this was impossible. Finally, to the right was found a tiny rocky chute between this icy granite slope and the eastern wall of the gorge. Up this for ten or fifteen feet I climbed, and here, being blocked by a large boulder, it terminated; but from this point, running off diagonally to the left, there was a tiny cleavage-joint in the granite slab. The nails in my shoes would cling to this as I reclined on my hands, face downward, against the frozen surface. In this way I worked crosswise over the slope and up to the broken cliffs above. Once there, it was an easy matter to reach the top of the boulder which had blocked the tiny chimney. Soon all of us were over this difficulty. Upward we went, clambering over boulders, hands and feet both in constant use. The chute was frequently

blocked by the huge slabs and cubes of granite fallen from the cliffs above. In places the blocks had fallen in such a manner as to make caves, the floor of the cave being the bottom of the gorge, the ceiling the under portion of the boulder itself. From the ceiling of one of these caves we found suspended many long icicles the size of broomsticks or larger. These we found to be delightfully refreshing, and quenched our thirst by nibbling on them or else by catching the tiny drops of water which were trickling from their ends. Our altitude was now about 13,500 feet, and I dare say that these icicles in this cave form the highest source of any of the branches of the San Joaquin River. The huge boulders, dropped as they were in this narrow gorge, were a constant source of trial and menace to us. Some of them were unstable, and must be avoided on that account; others were so lodged that they formed little precipices which we must circumvent.

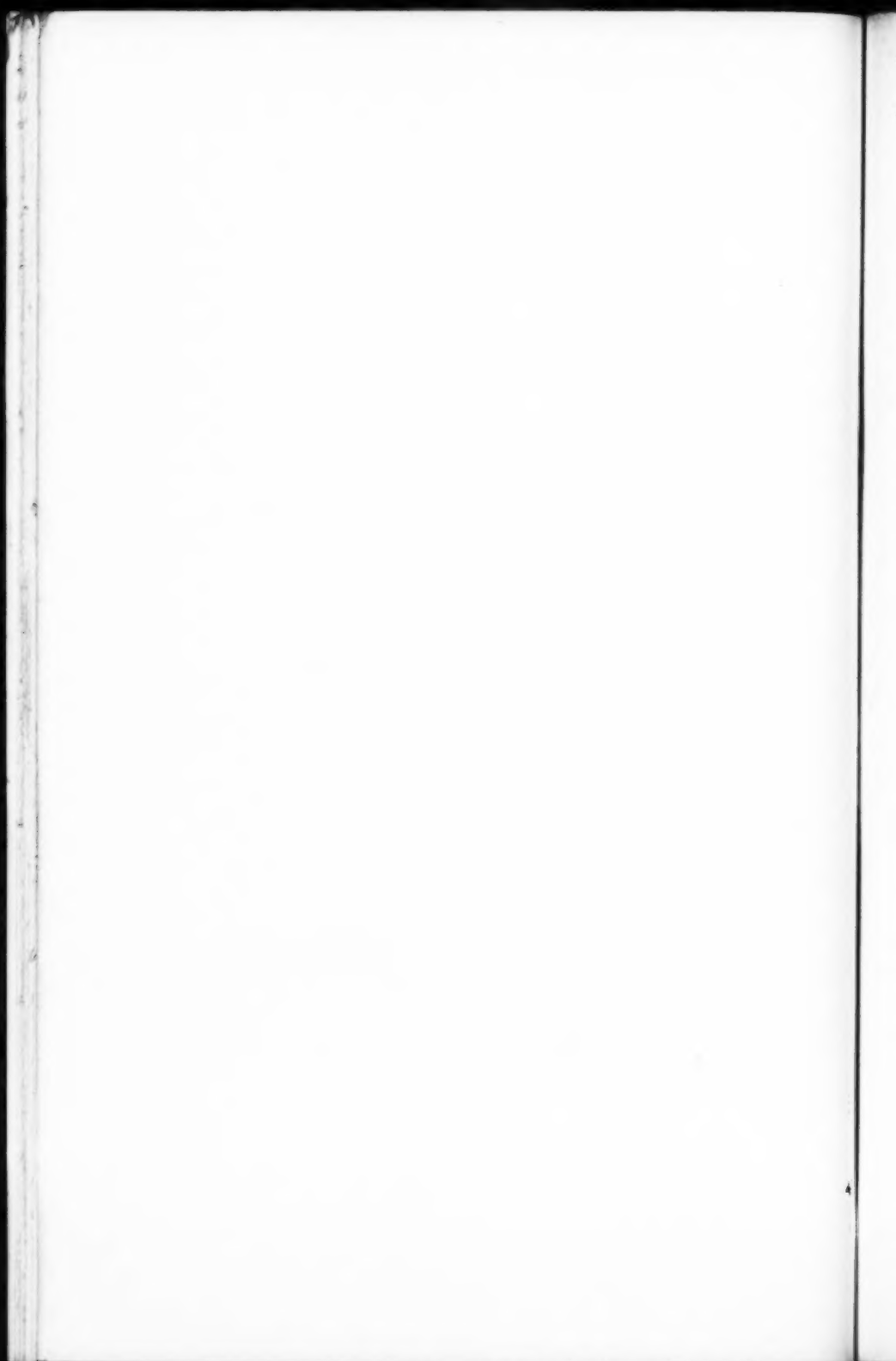
A hundred feet more of climbing and crawling on hands and knees, and the gorge opened up a little. All knew that shortly our fate would be sealed and the worst must be known. At this moment I happened to be ahead. Suddenly, and almost unawares, I came upon the knife-edge of the Sierra crest and looked over into a yawning abyss, down two thousand feet, to a wide-spreading snow-field held in a granite-walled amphitheater. I turned toward the summit above us, but could not see the extreme top, for it was hidden by the wall to our left, which arose two hundred feet above us, still inclined at an angle of seventy degrees. The lower part of the wall to a height of perhaps fifty feet was smooth and unbroken, except for a few crevices and projecting ridges caused by the

cleavage of the rock. To ascend this seemed possible, and I called to the others, "I think we can make it." It appeared to be the only way. Without realizing how precipitous the slope was, I started up it, getting here a toehold and there a fingerhold, all the while pressing my body closely against the cliff. In this way I ascended for thirty feet, and then the wall seemed absolutely smooth and unbroken. I gazed to the right and to the left and up above me. All was apparently as smooth as glass. In an unguarded moment I looked downward to see if I could retrace my steps. My first view was through the cleft where the gorge broke through the crest knife-edge almost directly below me and down and down the cliffs and on to the snow. I looked for the tiny ridges in the wall by which I had ascended, but could not see them, so closely was I pressed against the wall to avoid going over backwards. A cold chill crept down my back. My knees began to shake. The alarm, however, was only momentary. I saw the uselessness of fear, turned my face to the wall, and then looked on things above, determined not again to look downward. When I had fairly gathered myself together, I noticed above me about ten feet, and somewhat to the left, that a couple of blocks of granite had been split out, leaving a little pinnacle. If this place could be reached I would have accomplished something, and would have a vantage-ground from which to look for better things. If not to go up higher, I at least could have the rope thrown to me and, with a hitch about the pinnacle, could descend to the gorge again. Finally, off to the left I found a little foothold which had been overlooked before, and somewhat above it a fingerhold. By the use of these and



LOOKING DOWN A GORGE ON MT. HUMPHREYS.

From a photograph by J. S. Hutchinson, Jr., 1904.



a few others which appeared, and by hugging the rock very closely, the pinnacle was finally reached. Above this the inclination of the wall was not so great, and to the left there ran up a number of little parallel chimneys caused by the breaking out of the blocks along the cleavage-planes; but each chimney at some point was blocked with a large cube which had not yet been fully dislodged. It was possible, however, to work from one chimney to another, and thus avoid the obstructions in each move from chimney to chimney, gaining ten or twenty feet in altitude. Presently, after a climb of about two hundred feet from where I had left the others, I reached the knife-edge of the buttress of which I have already spoken. The summit of the mountain was only about twenty feet above this and the way was clear. I then searched around for a better way of ascent. The western wall of the buttress was a sheer drop over five hundred feet to a shelf, and from the shelf there was still another drop to the talus slope. The south side of the buttress was a mere knife-edge, notched throughout with sharp pinnacles. I returned to the eastern side and examined all the little chimneys running down there. All of them before reaching the bottom of the gorge ended, leaving a smooth cliff thirty or forty feet in height.

I returned through the little chimneys by which I had ascended as far down as I could, reaching a point where the wall below the chimney was more inclined than below the other chimneys, and where it was also more broken. At this point the rope was thrown up to me. I made it fast around a projecting rock, and with its aid my brother hauled himself up to my position. We then lowered the rope again for the others to follow, but they—the married

men of the party—had been deliberating and holding a council in the interim, and had decided that they had no right to take the risks which appeared necessary to complete the climb. Instead of attempting to follow us, they climbed a prominence which formed the summit of the eastern wall of the gorge. This they said was "Married Men's Peak," and jokingly called themselves "moral heroes."

Finally, at 11 o'clock, my brother and I scrambled on the summit (14,055 feet), and no longer looked on things above, but rather on things beneath—and far beneath. Circling all about us, three thousand feet below us, west of the main crest, lay the great granite amphitheater four miles in diameter, covered with large patches of snow and lakes of various sizes and shapes. Lake Desolation was just below us. This amphitheater is bounded on the south and southwest by the snow-tongue ridge over which we had passed, on the west by the Pinnacles, and on the northwest by a range midway between us and the Abbott group. These form an inner semicircle, beyond which is another concentric one, inclosed by the Evolution Group, the Goddard Divide, the divide between the South Fork of the San Joaquin and the King's River, the Seven Gables, and the Abbott Group, commencing on the south and extending far around to the north. Beyond the Abbott Group lay Red Slate and Red-and-White peaks. To the eastward the mountain dropped off a sheer precipice for two thousand feet or more into a huge snow amphitheater. From there the snow slopes at a steep angle several thousand feet further, and then a rolling volcanic country completes the balance of the distance down to the town of Bishop, more than ten thousand feet below us and about

sixteen miles distant. Owen's Valley is laid out in square farms like a checkerboard, and for miles and miles the green alfalfa-fields gave life to what would otherwise have been an almost lifeless scene. To the southward we could see the rugged line of the Palisades. Far below us, both north and south, forming part of the main crest, were several mesas, or tablelands, probably remnants of the old base-level through which the knife-edge and saw-teeth of Humphreys had cut their way.

The summit of Humphreys is not more than eight feet square and contains the same parallel lines of cleavage which I have referred to as existing in the gorge. It is one mass of cracked and broken blocks, thrown loosely together in such a way as to warn one to move cautiously lest the whole top should break off and fall into the great abyss to the eastward. While my brother built a cairn as a last resting-place for our Sierra Club register, I examined very carefully all about the summit for a possible way of ascent other than that by which we had come. The north side was almost sheer for five hundred feet down to the peak on which Le Conte and Cory had climbed. The whole western side was a series of precipices and shelves down to the talus slope, and then on down at a gradual angle to the granite basin. The southern wall, as I have already said, dropped at least a thousand feet to the knife-edge of the main ridge, which then extended on downwards until it connected with Mt. Emerson, near Piute Pass. The drop on the east was the worst of all.

There were no signs of any one having been on the summit of the peak before. Probably no one had ever stood where we then were, unless perhaps during the

early Jurassic period, before the mountain was fully sculptured. Then the mariners of that age (if there were any) might have sailed upon the waters of the Pacific close to the base of the mountain, and, there landing, have climbed up its then gently sloping sides. The mountain is very different from most peaks of the Sierra. It stands absolutely remote and alone. The nearest peaks are those of the inner semicircle of which I have spoken, but they do not reach much over 12,500 feet, and from our position appeared low. The nearest peak which approached us in height was Mt. Darwin, eight miles distant.

After an hour spent in viewing the landscape, we signaled to the others, and finally all met at the gorge where we had parted company. The process of descent to this gorge was about the reverse of our upward trip. The rope was in constant use, and we both heaved a sigh of relief when we were safely down. From there on the descent was practically over the same course by which we had ascended. It was much easier, for in many places where in ascending we had climbed on hands and knees now we could make a toboggan-slide of fifteen or twenty feet over a smooth surface or down a gravel chute. It was somewhat hard on portions of our clothing, but we "got there," and that, for the time being, was the main object. The rope was again used several times. The rocks in the steep chute lay so loosely that great care had to be used lest we should start an avalanche. Whitney and Noble went on ahead down one of these chimneys, and were several hundred feet below us. My brother and I moved with the utmost care to avoid setting any stones in motion, but suddenly a number started; these started others, and in a moment a deluge of them

was tearing down the chute directly toward those below us. We shouted like mad for Noble and Whitney to get out of the way. They looked back and saw the torrent coming. This chute was bounded on its eastern side by a precipitous wall, in which, near where they were standing, was a deep vertical niche. They rushed for this, and had no sooner concealed themselves than the avalanche went shooting past them. This was a warning, and thenceforth in similar places we all remained close together. In an hour we had reached the top of the talus. Here, by making a slight detour, we reached a snow-field which gave us a toboggan-slide of several hundred feet down to the granite basin. It seemed like an easy matter to cut across this basin directly to our camp, but the similarity of the snow-fields, lakes, and the granite bosses made it like a maze, and even when we were within a short distance of our camp it took us many long minutes of searching to locate it. Soon a drink of some newly brewed tea refreshed us.

We were unanimous that we ought not to remain another night in this exposed place, and so at once shouldered our bundles and descended five hundred feet to the thickest of the several clumps of trees which we had passed the day before. Here, beside an old sheep-corral, we made a more comfortable camp, protected on all sides by the mountain pines, and having here a bountiful supply of wood. Below us was a fine brook, and a plunge in this had the magical effect of making us whole again and putting new life into every fiber, vein, and muscle. What a glorious camp-fire we had that night! How brilliant the moon seemed! How comfortable and cozy seemed our combined kitchen, social hall, and bedroom!

By 4:30 the next morning we were retracing our steps toward our Snow-Tongue Pass. In an hour or so we reached Cirque Lake. Near here, in the snow, we followed for quite a distance some fresh bear-tracks going toward our pass. An hour later we were at the pass, and from there took a last, long, lingering look at Humphreys. On the other side of the pass we saw more bear-tracks going downward in the direction of our Lake Frances camp. What if the jacks and bears had been in mortal conflict! It was with a warm thrill that we came upon the lake, and there, on the opposite shore, saw our four jacks. They actually seemed glad to welcome us back home. The deep emerald waters of the lake were irresistible. In we plunged, only to swim to the shore with teeth chattering, knees shaking, and toes tingling, but again what a resurrection of hopes, joys, and ambitions came from the icy tonic!

On our return trip from Snow-Tongue Pass to Lake Frances, we passed many patches of red snow. A cup of this was melted and filtered through a paper, leaving a decidedly reddish deposit of very fine particles. After returning from our camping trip an examination of these particles under the microscope showed them to be little globules resembling fishes' eggs. Each globule appeared translucent and seemed luminous, as though shining with a light coming from the interior.

After lunch we descended to Evolution Creek. Here at the junction of the trails we found a monument of twelve stones, Le Conte's prearranged message, meaning that he had already descended the cañon. We followed, and the next day joined his party at the Mt. Goddard camp.

The following day we climbed Mt. Goddard, and then on the succeeding day started for King's River Cañon, by way of Collins Meadow, Tehipite Valley, and Simpson Meadow. At Collins Meadow, Whitney and Noble, owing to their limited time, left us and struck out westward by a trail which leads to Trimmer Springs. From there, they had the novel and exciting experience of a midnight flume-ride down to Sanger. Five days later, the rest of us were in our old familiar camping-grounds in King's River Cañon. Here Dr. Gilbert left us to explore the Roaring River country, and the remainder of the party hastened home, and our camping-trip was at an end.

Although the trip was at an end, yet the best of all was still to come—the retrospect. Every such trip as we had just completed has its joys, its pleasures, its excitements; there are the rugged mountains and the snow-filled cirques, the foaming streams and the roaring cascades, the alpine meadows, the wild flowers, and the glorious camp-fires; but there are also the hardships, the trials, the privations,—the lost trail, the straying mule, the drenching rain, the mosquitoes. But, with the retrospect, all is changed; all the trials, all the hardships, all the difficulties have faded into the background, and there is left a perfect and everlasting picture, ever increasing in beauty as the months go by. And now, after half a year has elapsed, and we can get the view of our trip in its proper perspective and can compare it with all the other camping-pictures which live in our memories, I think we can truly say that this last, this view into the Mt. Humphreys region, is one of the choicest treasures.

ADDRESS AT MEMORIAL EXERCISES.*

BY ALEXANDER G. ELLS.

It has fallen to me to take part to-day, on behalf of the Alumni of the University of California.

To say what the name Le Conte signifies and stands for to me, or to any other of the older graduates, is far beyond my powers of expression. "Dr. John" and "Professor Joe"! The names call up images of the spring-time of one's life, with its freshness and vividness, when all was eager anticipation, and a rosy haze veiled the difficulties and dangers—the chivalric period, with its rainbows of promise and its sowing of the seeds of future achievements.

Dr. John I met unawares during my entrance examinations, those days of dread to the stripling applicant for admission from a country school. Restless from nervous apprehension I had wandered to the end of the old "dummy" track toward Oakland, and was sitting at the station, waiting for the car to take me back to Berkeley, when a most kindly old gentleman sat down beside me and drew me into conversation. If he had been my own father, his sympathetic interest could not have been greater, nor his words more full of cheer and encouragement. The incident is amongst the most vivid of my college recollections.

Professor Joe I first met, soon afterwards, at one of the home-gatherings which were common then. I cannot explain the fascination which led me shyly to follow

* See page 254—"Notes and Correspondence."—EDITOR.

him about, to listen whenever he spoke, nor the thrill of his words when he chanced to speak to me—for he neglected no one. No more can I describe or explain the charm of a good woman, but I know that Professor Joe had it; and that with it he had also that nobility of spirit which commands respect, loyalty, and devotion.

It is not so much what he said nor what he taught that lives in my memory. The man impressed himself. My most distinct recollection of his teaching is of the substance of a lecture on the importance of scientific methods—those “tools of thought.” The idea was new to me at the time, and striking. Yet that idea seems as little connected with himself as though gleaned from an encyclopedia. In himself, he was far above, and he inspired thoughts far above any mere method,—thoughts for which words are too coarse and too scant. In this was his true greatness; and however valuable his scientific work, it cannot in the mind of any of his one-time students be compared in importance with his personal influence nor with his spiritual radiance.

There are keen and brilliant minds that are yet as distant and as cold as Arcturus with reference to human emotions. Men of science especially are apt to deem it a merit that their thinking is impersonal, uninfluenced by considerations of the consequences to merely human interests. Their admirably logical conclusions are held and taught with a lofty disregard, and sometimes disdain, of the pity of it. They are more interested in the “success” of the operation than in the life of the patient. The student at our colleges, and even the average man of affairs of these days, has his impulses and instincts curbed and his sympathies blunted by certain abstract and wholly

unemotional doctrines which are dignified and sanctified with the name of laws—the law of wages, the law of supply and demand, the law of population and subsistence, the law of the survival of the fittest, and the rest. These do credit to the human mind as a thinking machine, an intellectual engine, but are hardly creditable as ideals for an immortal spirit, whose wealth is not in the abundance of the things it possesses here but cannot take into the hereafter.

Fortunate is the institution of learning whose influential teachers are men, rather than dispensers of formulæ; men whose measure of success is the effect upon the character of the student rather than conformity with abstract laws.

Fortunate indeed also are the students whose impelling ideas, however severely scientific, are yet alive, not excavated from books, but throbbing with the human grace of such a teacher as Joseph Le Conte—alive to pity, and to kindness, and to the service of mankind.

Professor Joe was a scientist, but science to him was not merely clods and beasts and laws and logic. Human nature, human ambitions, human affections he rated far above these. For him science was but the stepping-stool for aspirations and for ideals which do not halt at the grave—which indeed can come to full fruition only beyond the grave. He knew well, and he made his hearers know, that scientific methods are only contrivances, man-made artifices, to be made use of where useful; but that to be bound by them is to be enslaved by one's own servants. In the great crises of life it is not any of the "ologies" that save. It is the homely truths consecrated by the experience of the whole race of man, and em-

bodied in the words *mother, sister, wife, children, friends*. Neither the Greek Sage nor the Galilean Prophet taught science.

It is fitting that we should dedicate this memorial in this unpretentious way. It is entirely in keeping with the simple, unaffected character of him to whose memory we do reverence.

Around us are the scenes he loved. Yonder dome holds up its massive head doing honor to his name. To us all the surroundings are enriched by associations derived from him. Like him, they hold themselves grandly superior to the trivialities and the artifices of conventional life, and to its petty distinctions. These mountains are hospitable to all alike. As the President of the Sierra Club puts it, when we come to the mountains we come home—home from the hollow pageants, the narrow conventions, the whited sepulchers—home to the peace and calm of the spirit.

In his autobiography Professor Joe tells us that at one time he thought seriously of joining the ministry; but found his calling elsewhere,—not to his regret,—for, as he says: "One may be a preacher of righteousness in more ways than one." His life-work demonstrates that there is no more effective way than just to be true, stoutly and sturdily true, to one's higher self, to one's ideals. This, after all, is the only way to make those ideals animate and forceful in the practical world. Mere preaching about them cannot give them vitality nor influence, any more than reading about it in a book can impart what Nature has in store for those who set foot upon her mountains.

These sublime surroundings are attuned to what is noblest in us. Through them, voiceless Nature is preach-

ing righteousness. She stands for it stoutly and massively, and she needs no ritual, and she needs no artifice.

So he that hath the sublime in his soul, let him preach righteousness by living it forth in its native simplicity, stoutly and sturdily. He shall awaken a responsive chord in all unpervverted natures, and a multitude shall call him blessed.

Let us dedicate this simple lodge to this purpose, to this ministry. Here our beloved teacher came again and again, as one comes home, for cheer and for aid. Hither let us turn as often as we may, not only for what we may gain of good from the sermons in these stones, but still more for the higher, more quickening inspirations from a life true to itself and in touch with Nature.

"God's truth has many voices; sun and star
And mountain and the deep that rolls afar
Speak the great language; and of mightier worth
The lips and lives of godlike men on earth."

MT. LYELL AND MT. RITTER ASCENTS BY SIERRA
CLUB OUTING OF 1904.

BY RUSS AVERY.

MT. LYELL.

Bang! W-o-w! "Everybody get up, get up, get up!" These explosive sounds in the early dawn that have become so familiar to the outing members of the Sierra Club were just as potent at 3 o'clock in the morning at the base camp on Lyell Creek as they were when, for the first time, the cunning cruelty of man inflicted them upon an innocent sleeping humanity.

The startling sound produced by shooting off the giant bomb went crashing among the trees, was hurled from cliff to cliff, and its reverberating echo had barely died in the distance before every tree and rock seemed alive and calling to its neighbor to be up and doing, for "tomorrow" had come—the strenuous day set apart for the climbing of snow-clad Mt. Lyell.

In a few minutes indistinct figures could be seen slipping out of the dark recesses of the forest into the dim light of the camp-fire and forming themselves into animated groups around the steaming kettles and the fragrant coffee-pots. It is said that the imminence of danger and the comradeship of the mountains makes brothers of us all. A cursory view of these shadowy forms confirmed this observation, for all the women in the party, in obedience to the rules of the committee for this day, had eschewed the conventional and cumbersome skirts and

arrayed themselves in bloomers or overalls, the sensible costumes of hardy mountaineers.

The informality of breakfast being quickly finished, the party was formed into a circle and told off in three companies with Captains Willoughby Rodman, Duncan McDuffie, and Olcott Haskell in charge thereof, respectively.

At 4:15 o'clock, just as the gray dawn began to light the cañon depths sufficiently to enable us to move with certainty among the rocks and trees, under the able leadership of Mr. E. T. Parsons, we started. We proceeded at first slowly up the steep side of the right-hand cañon-wall and through the forest and over the granite slopes until we reached the basin at the head of the valley we had left. Here our course for half a mile or more over a comparatively level stretch of open country was exceedingly interesting. Before us was the beautiful mass of snow coming far down the mountain-side and feeding the numerous small tributaries to Lyell Creek which we had to ford on inconvenient stepping-stones or leap across where width permitted; to our right were the steep cliffs of this glacial cirque; while to our left the lazy sun was just getting up from his cold couch and beginning to warm himself for the day's routine. As we made frequent stops to rest, we began to take note of our companions. Judging from appearances alone, one would assume that most of the party had slept on the charred embers of the camp-fire and washed their faces with the under-side of a frying-pan; while others had pale and ghostly visages, caused by covering their faces with cold cream and adhesive plasters; and all this care and trouble was taken to avoid blistering of the skin by the reflection of the sun on

the snow. All kinds of snow-glasses, hoods, and veils were on exhibition ready for immediate use, while bandanas of variegated colors served to enhance the picturesque effect. Altogether we presented more the appearance of an organized band of gypsy robbers than a respectable party of dignified citizens intent on the serious purpose of scaling a cold and forbidding mountain.

To the most of us the Lyell Glacier was a disappointment. We did not approach it from the right direction to get the best view of its terminal, and we found ourselves traversing its uneven surface before we realized we were near the glacier; and consequently the impression we gained was that of a very large field of snow on a sloping mountain-side with numerous small streams of water flowing from its base. Those of us who started for Ritter the next day gained from the top of the Donohue Pass a much more comprehensive view and a far more accurate impression of its true glacial features. But at best the Lyell is a dying glacier, and is not in the same class with its interesting, picturesque, and progressive neighbor on Mt. Ritter.

The jagged surface of the great snow-field engendered in us all a profound respect. Alternate thawing and freezing, combined with the action of the wind, had made uneven and irregular ridges of snow with knife-edged ice-blades for upper surfaces, and with intervening hollows of from one to four feet in breadth and two to four feet in depth.

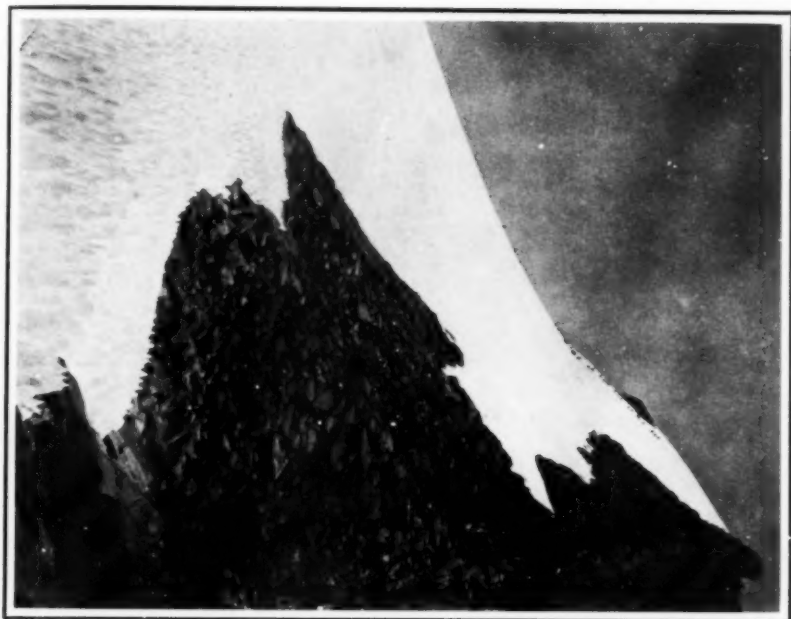
Over such a surface our progress for hours was slow and tedious. Three or four stalwart men in the lead took turns in kicking footholds into these slippery edges, and

the rest of us followed in single file, each one helping thus to make a better trail for the persons following; but even then, owing to the imperfect vision through unaccustomed snow-glasses, and from many other causes, we were constantly slipping from our insecure footholds and tumbling into the intervening furrows.

As we ascended our course became constantly steeper and more difficult, until the climax was reached in following the last tongue of snow around a ridge of large loose rocks. Here we used a hatchet to cut footholds in the ice, and, after the leaders had safely passed over and occupied comparatively secure positions for bracing themselves among the rocks, a rope was brought into requisition and held taut. Grasping this with our left hands, we crawled one by one around the end of the rock ridge, over the steep edge of the insecure and slippery ice, and on to the loose rocks above.

Great care had to be exercised in clambering over these rocks, as a careless step would start great masses in headlong flight and imperil the lives of those below. It was a great relief to escape the tension of the last half-hour of work and arrive at last upon the summit; and when, at 10 o'clock, the roll was called on Lyell's crest, and it was found that the entire party of fifty-three had reached the top without casualty of any kind, it was a matter of general felicitation.

That the climb was so successful was due to the perfect organization of the party, the precaution of the leaders, and the good sense, endurance, and hardihood of the members. If any of these elements had been eliminated, a large percentage of the party would have seen Lyell's summit only from a long distance off; for the

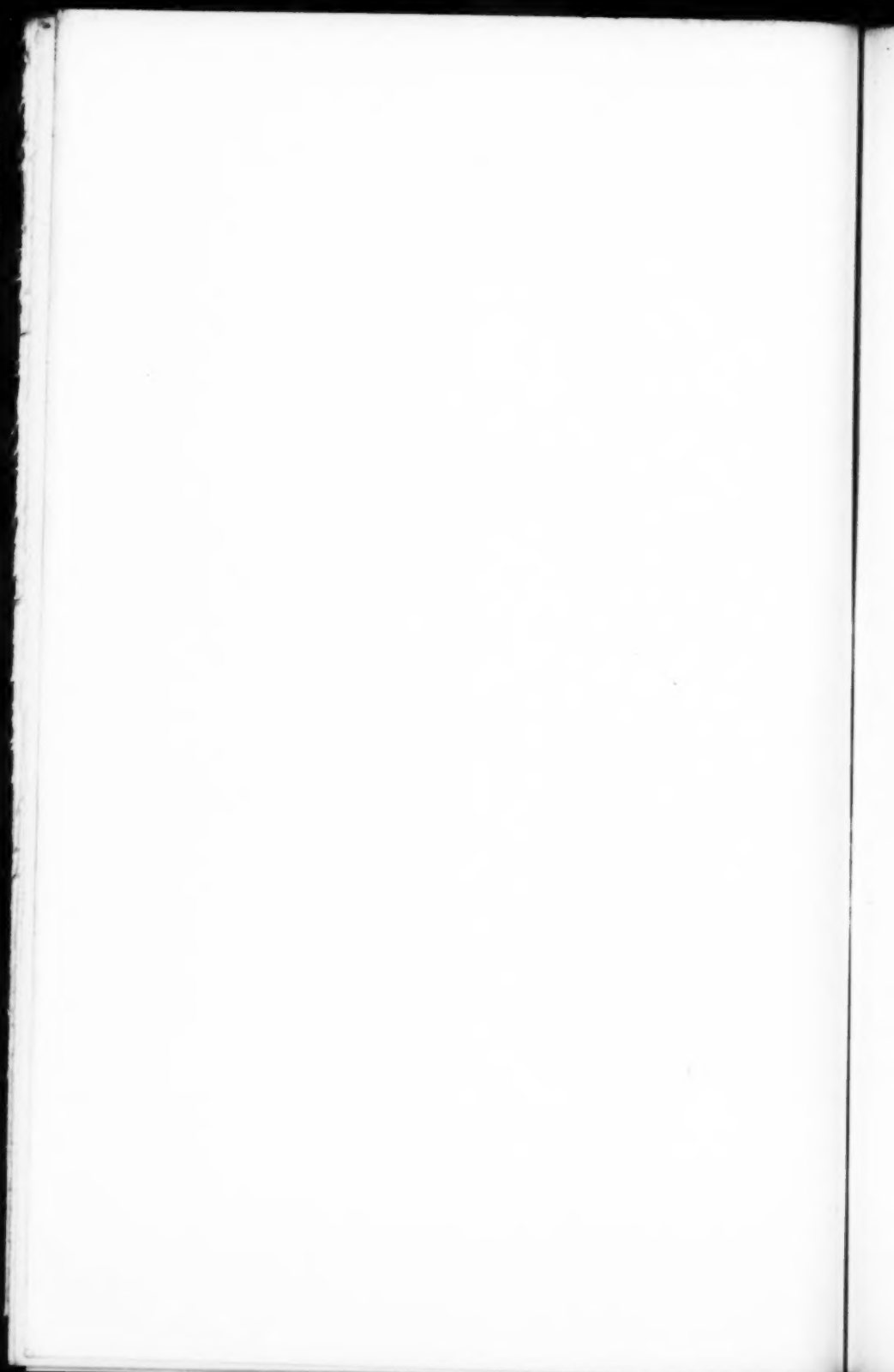


DESCENT OF MT. LYELL.—1904.

From photographs by W. F. Hyde.



ON THE SNOW-TONGUE OF MT. RITTER.—1904.



climb up the last few hundred feet was attended with considerable danger and was accomplished with much nervousness and anxiety. But, however great the toil and risk, our troubles were at once dispelled upon reaching the summit by a view of the magnificent alpine panorama. We were in the center of a sea of mountains; wave after wave of mountain ranges extended in all directions in countless recession, the snow-clad peaks forming the foaming crests of the raging billows. Here and there the regularity of the movement seemed broken by opposing winds, and the angry waves, lashed into fury and driven against one another, heaped their waters high in crests of frozen grandeur. Such was the impression given by the steep snows of McClure and the rugged, isolated peaks of Banner and Ritter.

Sheltered among the rocks from the chill winds of such altitudes, we ate our luncheon and enjoyed the inspiring view. At 11 o'clock our attention was attracted by flashes from Lambert's Dome, about twelve miles away, and just across the river from the main camp in the Tuolumne Meadows, where some of our friends had gone and were heliographing to us their greetings. With a small pocket-mirror we answered their congratulations, thus establishing wireless communication on the outposts of civilization.

We signed our names on the Sierra Club register and at 11:30 o'clock began the descent. We left in detached groups, but with one accord avoided the scene of our strenuous labors of the morning, and, by keeping well to the left, in a general northwesterly direction, and following the large and very steep snow-field, we arrived at the base of the mountain without exciting adventure. Those

who were going to Ritter remained that night at the base camp, while the others, according to previous arrangement, continued on to the main camp in the meadows, where they arrived that evening footsore, hungry, and weary.

MT. RITTER.

The next day nine members of the Sierra Club left the Lyell base camp and started on a knapsack trip over the Donohue Pass to Mt. Ritter. At the eastern foot of the pass we were surprised to hear voices, and soon we came upon the camp of Mrs. Hoagg's party. They had come up Rush Creek by way of Mono and Silver lakes, and on the day before our meeting had climbed Mt. Ritter from the south.

We arrived early in the afternoon at the upper end of Thousand Island Lake, where we made camp in a clump of twisted tamaracks situated about two hundred feet above the level of the lake. After a hearty dinner, and feeling at peace with the world, we sat on the rocks watching the beautiful effect of the gathering twilight on the rugged side of Mt. Banner. As the devouring shadow of night gradually crept up its precipitous side, it seemed as if the mountain was slowly sinking into the flood of darkness; then came a last pause for a moment, as if the Titan were making a final, desperate struggle to keep his head above the flood, and all was over. Yet, huge and indistinct, the shadowy form with its grizzled fringe of snow stood there in the night rugged, grim, and defiant. In the morning Banner was the first to be wakened by the sunlight; and, like Le Conte Dome in Yosemite, it is at all times the dominant figure in the landscape.

Although the altitude of our camp at Thousand Island Lake was over ten thousand feet, the night was uncomfortably warm, and the mosquitoes were uncommonly neighborly. If we uncovered to keep cool, the mosquitoes kept us awake by their singing and loud demonstrations of affection; if we covered our heads with our blankets to avoid the mosquitoes, we were too warm to sleep. The result was that we passed a very bad night.

We* rose early the morning of the 18th of July, and at 4:50 o'clock started toward Ritter. Our course lay to the southward for several hundred yards, then over a large and ancient moraine to the small but beautiful glacial lake at the foot of the snow-field extending westward from the saddle lying between Banner Peak and Ritter. This is one of the prettiest and most interesting lakes seen during the outing. The deep blue of its waters is in marked contrast with the whiteness of the numerous floes of snow and ice that dot its surface, while the reflection of the near-by peaks and rocks reminds one of the fine effects seen in Mirror Lake of the Yosemite. Here also is seen at its best the Ritter Glacier. The thick mass of snow and ice terminates abruptly on the eastern shore, and great blocks break away from the central mass, drop into the lake, and form miniature icebergs.

On the shores of this lake we paused to study care-

* Before starting from the Lyell base camp we had unanimously chosen Mr. Gould as our leader, and this evening, while around the camp-fire, we completed our organization by casting lots for positions in line. These positions we maintained not only in climbing the mountain, but in making the descent as well. In this way each person took an equal chance with the others in the dangers of the trip, and particularly in the liability to accident from falling rocks started by those who preceded or followed him in the ascent or descent. As thus formed, the party was as follows: Edward B. Gould, Duncan McDuffie, William Frederic Badé, Olcott Haskell, Russ Avery, W. H. Kimball, Willoughby Rodman, Julius Cahn, and Lowell J. Hart.

fully the configuration of the mountain and to plan our attack. It was evident to us all that the only practicable approach would be over the large snow-field to the top of the col between Banner and Ritter, and from there we would have to investigate farther.

The snow afforded much easier traveling than was found in the ascent of Mt. Lyell, as the hummocks were generally neither high nor far apart, and, during our ascent, had not yet been softened by the morning sun. Our progress as far as the saddle was therefore quite rapid and comparatively easy. Here we stopped to take photographs and to study the problem we were about to try to solve.

Ritter Mountain is peculiar in that it has several large ridges of rocks extending far down its northern slope, with long and narrow intervening tongues of snow, many of which terminate abruptly at the feet of insurmountable cliffs. The rocks are very large, unstable, and easily dislodged. The snow is very steep, and when frozen affords difficult footholds; when thawing it is unsafe and is easily started in an avalanche. As it was still early in the morning, and the snow was quite solid, we planned our course up one of the largest of these snow-tongues. As we ascended, the snow-blades became thinner and farther apart and the spaces between them deeper, while at the same time the inclination of the snow-field on the mountain became steeper, the angle ranging, as we estimated, from forty-five to sixty degrees. In some places the snow was as nearly perpendicular as it could well be and still cling to the mountain-side. A photograph taken by Mr. Badè shows this perpendicularity in an excellent manner, the members of the party being

almost directly one above another, as if climbing a ladder. We gradually worked to the right, and, leaving the snow-tongue, began climbing over the insecure rocks at its edge. One of the members of the party who had remained behind to get a good photograph of the snow-field, with ourselves in the foreground, came along rapidly to overtake us. When he was still some distance below us and partly hidden from our view by intervening rocks, a stone, which had become loosened by us, started bounding in his direction. All that we could do was to give a cry of warning and await results. His position was interesting and for a few seconds precarious. He could not see what was coming, and, being still in the snow and unable to seek the protection of the rocks, he stood ready to jump to right or left and avoid the threatening danger as best he might. Fortunately the stone passed harmlessly by him.

The rocks became gradually more difficult to climb, until, when we began to think we were almost at the summit, we were confronted by an insurmountable cliff. We then realized that we should have kept farther to the east (to our left) and continued up a snow-tongue that had at first seemed impassable. We could not go on, and none of us wanted to go back; so while we were canvassing the situation our leader began to investigate the possibility of crossing over a very dangerous-looking edge of ice and snow to a rock-ridge beyond. The snow had so thawed away from the rocky cliff on the right that there was a wide and deep crevice intervening, while on the left the snow stood at an angle that was not far from perpendicular, and the top was a mere blade, too thin to give a safe foothold; in addition to which the sun

had thawed the whole mass into a treacherous condition. Under these circumstances we very cautiously straddled the difficulty, and breathed more freely when we were again on rocks. Later in the day we viewed this place from below and felt very thankful that we were not compelled to cross it a second time. After a few minutes more of hard work we reached the summit,* having been five hours from our base camp in making the ascent.

The panorama viewed from the top of Ritter is more extended than that seen from Lyell. Looking first to the north, one may see the head-waters of Rush Creek near Donohue Pass, observe much of its course, and see its outlet in the alkaline waters of Lake Mono. The rivulets formed by the melting snows nearer the base of Ritter and Banner flow northward a few hundred yards from the moraine we crossed in the morning and empty into Thousand Island Lake, which in turn is the main source of the Middle Fork of the San Joaquin. Just south of this moraine is the glacial lake previously referred to, and which is one of the uppermost sources of the North Fork of the San Joaquin. The two rivers thus rising within a few inches of each other flow in opposite directions, circle the mountain, and unite their waters several miles to the southward. Farther to the west are the head-waters of the Merced rising from the snows of Lyell.

The well-known mountain peaks to the north are of course Dana and Conness. Lyell and Florence lie to the northwest, but seen from an unfamiliar side are not at first recognized as friends. The South Dome of Yosemite

* Mt. Ritter (altitude 13,186 feet) is 96 feet higher than Lyell, 136 feet higher than Dana, and 2,265 feet higher than Hoffman.

is almost as conspicuous here as it is from Lyell. Mt. Clark is to the south of west, while Gray and Red mountains, Merced Peak, Black Peak, Goddard, Humphreys, Red Slate, and, in the distance towards Nevada, the White Mountains, are easily picked out in their order. In fact, snow-capped peaks surround Ritter in every direction, so that one is inclined to unite in the ecstatic descriptions of others who have ascended this mountain and say that the view from Ritter is one of the most sublime to be found anywhere in the High Sierra. The combination of snow, ice, granite, trees, glacial lakes, the Mono Lake and craters, Pumice Valley, the majestic White Mountains of Nevada, the near-by Minarets, and rugged Banner Peak almost within stone's throw, the Coast Range in the dim western haze, and the numberless unnamed peaks and crests to the north and south as far as the eye can see, form a vision never to be forgotten. For two hours we remained on top of the mountain, drinking inspiration from the view, during which time we also managed to do full justice to the usual hearty Sierra Club luncheon.

With a brief account of our ascent we inscribed our names in the Sierra Club register, and on top of the cairn placed the skeleton head of a mazama which Mr. Gould carried up from near Thousand Island Lake for the purpose. Leaving this guardian of the sacred archives, we regretfully turned away from the magnificent view and slowly and cautiously began our descent.

This was no easy task. We followed down a ridge of large and very loose rocks which led in a northeasterly direction to the big snow-field between Banner and Ritter. These rocks would appear from above to be very secure,

but when, with too much confidence, one trusted his weight upon them, they would slide from their positions and go crashing down the mountain-side or shoot over a sheer precipice perhaps two thousand feet in depth. We were obliged to exercise the utmost care, testing nearly every rock with foot or hand before daring to rely upon it. We often came to a standstill, and had to explore in various directions before finding a crevice or a ledge that would permit us to continue safely our downward course. When at last we reached the snow,—which had been considerably softened by the sun,—we tobogganed, ran, and rolled down the steep slope until we were once more at the edge of our pretty glacial lake.

We arrived at our base camp at Thousand Island Lake at about 4 o'clock in the afternoon, and, hastily packing our knapsacks, continued on our way for about five miles, camping by the waters of Rush Creek at the eastern foot of Donohue Pass. We were hungry and tired, but good-natured and happy.

For dinner we cooked the remnant of our provisions, except coffee and mush, and soon were enjoying a sleep that dynamite alone could interrupt. The next morning, after a light breakfast and a two hours' tramp, we arrived at the Lyell base camp, cooked a second breakfast out of provisions left there for that purpose, and not long afterwards arrived in the main camp at Tuolumne Meadows fresh and hearty, ready for luncheon and another mountain.

The altitude of Mr. Ritter, as given on the map of J. N. Le Conte, is 13,186 feet. The register-can of the Sierra Club was deposited on the summit July 10, 1897. It contains, in addition to the official register of the club (No. 204), some interesting memoranda of previous ascents. As these papers are badly weather-worn and faded and the writing is partially

obliterated, it may not be inappropriate to give their contents here. The first memorandum is as follows:—

"U. S. Geological Survey. Topographical Survey of Mono Lake Region.
—— W. Johnson, topographer. John Miller, assistant. Occupied Mount Ritter Aug. 26th, 1883, with plane-table. Occupied East Ritter, or Banner Peak, same day."

Note two: "Sidney I. Peixotto, 1626 Sutter St., San Francisco; Theodore S. Solomons, 1707 Scott St., San Francisco; Joseph Le Conte, Jr., U. C. '91, Berkeley, ascended July 26, 1892. We came up from Yosemite, Soda Springs, across pass east of Lyell, head-waters of Rush Creek, across divide to lake, head-waters San Joaquin, thence to top of Ritter by way of glacier and wall opposite Banner Peak. Beautiful clear day."

Note three: "Summit of Mount Ritter, Aug. 2d, 1892.—R. M. Price, U. C. '93, Berkeley, Cal.; L. de F. Bartlett, U. C. '93, 1233 St. Charles St., Alameda, Cal. We ascended this peak in 4¼ hours from the head of the large isle-dotted lake or by coming over the glacier to saddle between Mount Ritter and Banner Peak, thence scrambling up along the rocks. We reached the lake by following practically the same route as that followed by Messrs. Le Conte, Solomons, and Peixotto. We found the ascent of this peak less difficult than the climbing of a peak to the west of Lyell, which we climbed July 31, 1892."

"R. M. PRICE,

"L. DE F. BARTLETT,

"Sierra Club Tramps."

Note four: "Aug. 20, 1892.—Ascended again, reaching summit at 6 p. m., having come all around the peak, ascending from the south with 8 x 10 camera and plates on my back. THEO. S. SOLOMONS."

A DEER'S BILL OF FARE.

BY ALDEN SAMPSON.

The summer of 1903 I spent in the forest reserves of the United States, mainly of California, engaged for the Biological Survey of the Department of Agriculture in work for the establishment of game refuges. During days of observation in the saddle, and on foot, and at night by the camp-fire, the subject of a deer's bill of fare often came up for discussion. After repeated conferences with hunters and rangers, the following articles were admitted. As that journey was in a certain sense a voyage of discovery, wherein I was engaged with the study of the general problem of game refuges, unbiased by preconceived theories, so is this list tentative, and includes almost exclusively plants growing in Southern California and in the Sierra Reserve. I would invite criticism from hunters who are able to verify their opinions by the examination of the contents of the stomach of the deer when killed, and would urge all hunters to make a practice of examining and identifying those ingredients. Should this have for result that the hunter thereby gains familiarity with plants, that individual is to be congratulated upon one more card of admission to the delights of the forest.

In forming this list, I have, in almost every instance, tasted the leaves of the plant which is included; by doing this one comes to know with a certain instinctive certainty what a deer would *not* like. The deer have a sensitive and cultivated palate. Their food, if not purified by fire

like ours, is still of the cleanest, most appetizing sort, the newest and freshest growth. Their palate is stronger than ours, and they often eat a plant that we cannot quite relish with zest because it has a little too much tang to it, but having tasted many things which I know they eat with pleasure, I should expect to find, in the vast majority of cases, any food which they like not repugnant to our palate if partaken of in reduced strength. So that, in the last analysis, it is largely a question of quantity, not of quality, in which our tastes differ. Their palates do not accept food which we find in small amounts rank and hateful. Whether the deer have a palate more sensitive than ours, or as sensitive, I do not know. Of course, the variety of our food and the range of difference from all sorts of fruits and vegetables to meats and highly flavored sauces, complicated to the extreme degree, and to wines of extraordinary delicacy, a little infinity of items, comprise a vast gamut beyond the possibilities of the deer's bill of fare. But that is not a demonstration that our palate is more sensitive than theirs. If refinement and cultivation consist in the power of perception and discrimination of slight differences, then it may be that the palm must be given to the deer. Their sense of taste is supplemented by the marvelous gift of scent. Their power of scent is incomparably more sensitive and powerful than ours, and these two organs of scent and taste are very closely related. Every one knows from painful personal experience that with a severe cold in the head, which deprives him for the time being of the capacity of smelling anything, the sense of taste also disappears. Even the slight power of scent which man possesses he often impairs by excessive use of tobacco, and thereby as

well dulls the sense of taste. The gourmand becomes more and more dependent upon condiments and highly seasoned dishes for his satisfaction; the things which can gratify his cravings become elaborately artificial, and it is almost an axiom that a jaded palate requires a more and more trenchant lash; particularly in hot countries men abuse condiments. I believe that, aided by the power of scent, deer can discriminate between fine shades of difference almost, if not quite, imperceptible to our palates. Their food is not defiled, as much of ours must be, by contact with other individuals of their own species. They gather the finest, freshest, newest growth of herbage, daintily plucking a sprig or a leaf here and there. They are creatures of intelligence and of great zest in living, and their dearest delight is to eat, and to eat the best which the forest affords. Time is no object to them. They give many hours daily to the gratification of their desire for food, whereas humans take an infinity of pains in preparation, and in getting the food to eat, in earning their living, but after all allow but brief time for its enjoyment. As compared with man's hasty and wolflike manner of bolting his food during a few minutes, often in hateful surroundings, three times a day, these dainty creatures are true epicures. They have mastered the difficult and refined art of eating slowly, far more satisfactory than our method, whether health or pleasure be at stake.

Up among the pines and the oaks, in the summer range of the deer, when one looks for a good deer country, he will find it where the buckthorn grows in abundance, the wild lilac and the oak. The deer are fastidious in their choice of viands; any one who thinks that they munch

grass like a cow is making the mistake of his life. In the summer they do this hardly more frequently than they regale themselves upon ham sandwiches or chocolate eclaires. Deer will crop the juicy and succulent heads of grass coming into seed, while they are rich and luscious, and they will, with delight, pluck the milky grain of the wild oat as it matures, but their usual food, while it is of great variety, does not chiefly consist of the leaves of grass. They are quite different from antelope, elk, mountain sheep, and the Rocky Mountain goat in this respect. Deer at times, in the winter, doubtless graze like cattle or sheep, but that is a case of "Hobson's choice"; there is little else then upon which they may satisfy the cravings of hunger. In the climate of Southern California the grass is cured standing, and even beneath the snow retains its sweetness like hay; it is hay, and the hillside is Nature's barn, spacious, well ventilated, and safe from destruction even in earthquakes,—only fire imperils the precious supply of food. The conditions under which this crop is cured and held in storage maintain a quality of wildness acceptable to their idea; even if the food itself be tame, at all events it has not been contaminated by touch, as much of our food must necessarily be, but is pure and sweet. In that climate the ripe grass, dry and nutritious, retains its full strength. Besides the standing hay, which the deer eat during the winter, account must be taken of the winter browse, an infinity of little branches, cropped moose-fashion, the tips of fir boughs, spruce, juniper, and pine, withered herbs, and various other unconsidered trifles, taken in lieu of more nutritious diet. Even man loves to chew a straw or the equally nutritious twig, and his power for deriving

sustenance from these, in comparison with the deer's, is just about as strong as the relative sense of direction and "locality," as a phrenologist would call it, in the two creatures. Take the carrier pigeon and the deer, on the one hand, and man, reason-guided and stumbling, on the other: what a chasm separates them in the exercise of this wonderful and to us almost inexplicable endowment! In a similar manner, civilized man is one of the weakest of animals in regard to food; until his slave, fire, has half digested it for him, he remains starving in the midst of plenty.

In California the scrub oak always abounds in a good deer range; this is the standby of the deer, and they eat with relish the young growth of all the oak family growing in this part of the world. To begin with there are three species of scrub oak* found in the valleys and on the heights, and in the whole State no less than eleven well-known species, with several obscure additional forms, are found.† Next in the order of their preference comes the California lilac, both the white and the purple varieties; in various sections other names commend themselves. A white lilac (*Ceanothus integerrimus*) is sometimes called deer-brush, significant of the deer's liking for its leaves; also mountain birch, from its delicate form, white tea-tree, presumably because an infusion may be made from its leaves, red-root, soap-bush,—the last very appropriate, since in flower the bush with its white delicate masses of bloom looks like the purest foam. This, however, is not

* *Quercus dumosa*, *Q. vaccinifolia*, and *Q. Breweri*.

† The black or Kellogg's oak, the live oak, the valley oak, the white or Douglas oak, the small desert oak, Engelmann's live oak, the golden-cupped white live oak, the chestnut or tanbark oak farther north and in the Coast Range.

the origin of the name, but the less ethereal circumstance that its flowers may be used as soap.* Other trees besides the oak minister to the wants of the deer; the willow, maple, ash, cottonwood, and wild plum they find agreeable; the leaves of these they eat, and of the wild currant, hazel, elder, tree-mallow, rose-bush, as well as the pleasant-flavored petals of its flowers; the young growth of manzanita, snow-brush, or buckthorn (*Ceanothus cordulatus*), this last a prime favorite,—one finds whole glades of it,—when in fragrant flower sought by all the butterflies and bees of the countryside. This must not be confused with the buckhorn, a much larger bush, tree almost at times, of which they also eat the tender leaves. After much argument *pro* and *con*, I believe it is a fact that, like cattle, sheep, and horses, they eat the leaves of the poison-oak. This I did not myself taste, but several men who are immune to its poison assured me that its flavor is not unpleasant. Deer eat the leaves of the honeysuckle, the peculiar-looking, leafless, delicate, tapering branches of milkweed, the new growth of dwarf white sage, and other varieties of the sage family, huckleberry-leaves, the leaves and green pods of the balloon-plant, the morning-glory and its cousin, the woolly morning-glory, well named from its fuzzy leaves, and on the edge of the desert they eat the plump, juicy leaves of the branching flat cactus, or prickly pear. How they manage to swallow the innumerable needles with which these are covered is a puzzle. Of course, after having been subjected to the

* The half-ripe fruit of the buckhorn serves as a similar substitute to remove grease-spots, and there are various other soap-bushes and soap-plants. The *zygadene*, or death-camass, is one of these, the Spanish bayonet is another, but the best known of all is the tall, wraithlike soap-weed (*Chlorogalum*), its scattered frail branches bearing white starlike flowers which open to herald the evening star.

digestive fluids of the first and second stomachs, and brought up for the final mastication of the cud, these spines are more or less softened and flexible, and are then disposed of with comparative ease before being returned to the third and fourth stomachs for further digestive treatment; it is a complicated process, that of transforming grass into blood.* Also in the desert they eat the mesquite beans, and when ripe revel in the fruit of the prickly pear, as marvelous a distillation of sweets from the awful sterileness of the land as the combs of honey were which Samson found in the carcass of the lion. In the forest deer love the leaves and buds of the tiger-lily,† the sheep-sorrel or wood-sorrel, and the Oregon sorrel, as well as other tart herbs,—for instance, the wild pie-plant (*canaigre*). They eat acorns, and, in fact, at certain seasons of the year, as well as with Indians, bears, squirrels, chipmunks, the wild pigeon, mountain quail, and woodpeckers, and, I fancy, the fox when very hungry, the wildcat, skunk, and porcupine, acorns are a staple of diet. Deer love all kinds of soft, succulent berries which man finds edible,—strawberries, raspberries, blackberries, currants, blueberries, huckleberries, mulberries, wild currants,—whether black, red, or yellow,—gooseberries, service-berries, elderberries, salal-berries, the Oregon grape when they can get it, the thimble-berry and its relative, the salmon-berry of the north, the berries of the toyon, or Christmas-berry, and also domestic fruits—apples, cherries, apricots, nectarines, plums, pears, peaches, and watermelons, when they can

* Donkeys, mules, and horses love the heads of thistles, and I imagine that deer do as well, but have not the requisite evidence.

† *Lilium pardalinum*.

steal them from the garden; wild choke-cherries, the holly-leaved cherry, and, perhaps for tonic variety, the little bitter wild cherry; the hips of rose-bushes, the wild plum, wild grapes, of which there are two varieties, the black and the green, the wild California coffee-berry, and perhaps the bearberry, or killikinick. Cattle, horses, and goats love the lupine, of which there are many varieties; whether or not deer eat these I am not quite certain, but feel a reasonable degree of confidence that they do. They are fond of alfalfa when they can get it, and the leaves of lettuce, beets, turnips, cabbage, chicory, and peas. Green peas and string-beans of course are dear delights. I think that they, as well as humans, eat the humble herb of the garden and farmyard, the world-wide and unflattered pigweed. It is not so generally known as one would expect it to be that the young growth of this plant when boiled makes excellent "greens." When man so employs it he calls it by the more flattering appellation of lamb's-quarter.* Deer eat the leaves of the cascara,† a name certainly advertised sufficiently now to be familiar to all. They eat the tender stalk of the Quixote-plant, which, in full flower, proudly flaunts its cream-white blossoms along the foot-hills, scattered standards of beauty, very striking seen rising high out of the chaparral. This is more commonly known as the yucca, one of several varieties, yet I was corrected by a well-informed ranger for calling it such rather than by the name more usually employed by the Mexicans. Deer love the leaves of the chinquapin and its little

* The leaves of the California poppy are used also by the Indians for greens. Does the deer crop these?

† The Mexican cascara sagrada.

triangular nut, also the hazel-nut and the nuts of the various pines when they can get them, of the Coulter, the Sabine or digger pine, the rare Torrey pine, the sugar pine, of the yellow and Jeffrey pines, of the piñon, and the nuts of firs, the cones of which fall to pieces of themselves when the nut is ripe. The berries of the manzanita they partake of as well as men, foxes, coyotes, bears, wild-cats, and skunks.* The acid of these dried berries, which remain for months on the bushes in that condition, is admirable for quenching thirst. Many a time have I been grateful to them for that service. Strange as it may seem, these are more efficacious for quenching thirst when one is engaged in strong exercise than water itself. There can be but slight nourishment, only a taste of acid and sugar, in this dried hull of the manzanita-berry, for the withered pulp is no more than that, yet during the starvation months foxes eke out a scanty living on these and on equally dry feed. That is what one gets for being a fox! Yet, if he survives, he maintains superb health, and, if given the chance, would, like all sensible creatures, scorn the most desirable "situation" which would rob him of his freedom and of the fierce delight of winning a livelihood under adverse conditions. This is a faculty requiring skill, determination, and good judgment on the part of the fox, and, like the exercise of any other power, gives its possessor the keenest satisfaction. Here is long life to the likes of him!

Among the grass-seeds in milk which deer like are those of the mountain bunch-grass, the heads of a certain beautiful purple grass, the rich heads of the timothy, and

* It is interesting to note that the botanist who gave the scientific name to this plant called it "bear grapes," the Greek *Arctostaphylos*.

the wild blue-grass. They would, I fancy, crop all rich grass-seeds in the milk, since then they are soft and succulent. When the resources of civilization are at command, they find a pleasant change of diet in the green heads of barley, wheat, oats, rye, and buckwheat. Besides the last, there is a plant called wild buckwheat which they affect.* I have the word of John Muir, repeated to me by Ranger Ellis of the Sierra Reserve, that they love the flowers of a little plant of the purslane family, which grows close to the ground almost as flat as a track, in six or eight, or more, delicate purple velvety tufts, and is appropriately called pussy's-paw.

Among the plants which they like is one growing ten or fifteen inches high with the brightest of red flowers, very handsome as seen on the naked gravel among the scattered pines, and irresistibly attractive to humming-birds—the scarlet bugler. They love filaree, Indian lettuce, sweet clover, sour or bear clover, and are fond of the wild cucumber, called by the Mexicans *chilicothe*. They love the suncup, which is one of the little evening primroses, and when feed is scarce the deerweed, or wild broom, the fireweed, with its purple-pink blossoms, a favorite food of that shyest and most elusive creature of the forest, the sewellel, or mountain beaver. They love the blossoms and tender stalks of the soapweed and the leaves of what is called the quinine-bush (*Garrya*),† on account of its medicinal, bitter leaves. When heavy

* *Eriogonum fasciculatum*.

† Some botanists place this in the dogwood family; others, more exclusive, in a family by itself. Miss Alice Eastwood, of the California Academy of Sciences, a high authority, says: "I incline to the latter view, for the plants are very different in all respects from any form of dogwood. . . . Some species have very bitter fruit, while others have fruit which is palatable."

with seed in the late summer, a careful observer assures me that they eat a plant which has no common name, so far as I know. It grows in gravelly soil, and is from eight to sixteen inches tall, according to its situation, of a frail branching nature, very thin and daddy-long-leggish; botanists know it by a name almost as long as it is, *Gayophytum ramosissimum*, the "most branchified." There are many other edible seeds doubtless agreeable to deer; those of the mock orange, Spanish bayonet, Indian wheat (one of the sunflowers, also called the compass-plant), the large vetch,* the pond-lily, and probably others which the deer know well, and with which I am not yet familiar. I have admitted nothing to this list until after careful scrutiny. An intelligent resident of Kern County, in the southern Sierra Reserve, was comprehensive in his designation of the deer's proclivities in the matter of food: "They eat 'most anything that a goat would eat." But I have grave doubts whether the dainty little Columbian blacktail would relish the bill-posters and wind-driven flotsam of the sandlots or of Harlem Heights. I am indebted to this man for one item of my bill of fare, identified by the seed-vessels which he gave me, the short-flowered pentstemon. Like the intelligent man that he was, my informant had a few of these in his pocket; their very touch, by mental association, helping him to tide over a barren hour. The deer love the leaves of this bush. Every naturalist sympathizes with this mental trait.

I should like information in regard to the following items (may they be admitted to the list of food which deer like?): horse-mint, the close-jointed rush or reed of the

* *Vicia gigantea*.

brook with its creeping root-stalk, the shoots of which resemble the long quills of the porcupine; it is one of the horsetail family. There are also sedges with edible roots which I think deer would eat, and they are not averse to digging when occasion demands. For instance, they are so fond of beets, turnips, carrots, and parsnips, that they will dig for them. I have not the evidence at hand, but feel almost sure that they would like the bulbs of the *camass*, favorite food of Indians.* Grizzly bears dote on these, and Indians set so great store by them that the Nez Percé war in Idaho was fought for the possession of the grounds where they are found in abundance. As a boy I often ate the new growth of the fern fronds, found in the spring-time in our northern woods. Deer I think would like them.† Among other roots which grow here and which man accepts as food are the wild onion and the bulb of the Washington lily, also the wild hyacinth, the root of the mountain primrose (the *racine amère* of the *voyageurs*), the bulbs of the yellow globe-tulip, and of the green-banded Mariposa lily, by the Indians the most passionately loved of all bulbs that grow. I should expect to find that deer also like these, but have not the requisite evidence that they do.‡ Near Mono Lake, on the desert side of the mountains, grows the bitter-brush, bearing seeds said to be favorite food of cattle and very fattening. The meat of this little nut, which looks like a diminutive

* *Camassia esculenta*.

† Bruised fern-roots are recognized Indian food.

‡ Mr. Galen Clark, the *doyen* of the Yosemite guides, told me that near Wawona grew a plant called by the Indians "toonge," which had an edible root like a small sweet potato. This is not found in the Yosemite Valley. Can any one give further information? On the desert side of the Sierra, near Mono Lake, I was told of an edible root, called by the Indians "tubuse," which tastes like milk. Can some one supplement this scanty information?

acorn, is absolutely the most bitter thing I ever tasted, and bitterness has long been accepted as the type of that with which the human palate finds hardest to reconcile itself. I was assured by one hunter that he had often found in the deer's stomach the yellow blossom which, when growing, is of about the size of a half-dollar, of a plant with pungent leaves. It used to be common in Colorado, where the aromatic odor of the drying leaves is a familiar autumnal scent, and recalls many a hunt after deer and elk; it has the unappetizing name of "sneezeweed." To confirm this statement the ranger who contributed it has written, since my return from California, that he killed a deer in the valley of the Big Arroyo, flowing into Kern River, which had the flowers of this plant in its stomach. Do deer like the flower and edible fruit of the wild mahogany?* There is also another so-called mahogany having edible berries, which the Indians and Mexicans are so fond of that they dry and keep them for winter lemonade; and still a third so-called mahogany has twigs of a pleasant birchy flavor, loved as browse by cattle, and it may be by deer. Would they crop the leaves of the domestic parsnip? This has a strong and individual taste.† Do they eat the seeds of a plant which covers wide areas in the Sierra foot-hills, variously known as bear-clover, grouse-brush, and mountain-misery? These seeds are not unpleasant to our palate, but the leaves have a rank tansy-like smell. I do not think deer would eat them, though sheep will do so when sufficiently hungry; but then the

* *Cercocarpus betulaeifolius*.

† The leaves of the wild parsnip are said to be eaten by horses; whether or not by deer I cannot say. It is reported to be poisonous to sheep and cattle. On this I should like information. The parsley family has a bad reputation; there are said to be poisonous plants among them. Are the roots of any of these poisonous?

un aristocratic sheep is not a deer,—when it comes to a question of the individuality and interest of the two creatures, as well compare a wheelbarrow with the swallow that skims above the surface of a lake, as the stupidly useful sheep with the deer, symbol of free and keen activity in the wild life. An instinct apparently saves the deer from eating the poisonous mountain laurel which causes the death of so many sheep. The deer are old residents here and do not make rash mistakes; they are doubtless protected by instinct developed through long cycles of time and by vicissitudes of every sort. Natural selection with them has developed an infallible instinct, far safer in a case of this sort than man's reason, which has this great limitation and fault, that unless supplemented by wide experience and a strongly retentive memory, it must each time act *ab initio* under the direction of the will, whereas instinct makes its selection automatically, by no effort of the will. The creature's ancestors have equipped him in this admirable way for the struggle of existence. The deer thus rejects instinctively poisons which prove fatal to cattle and sometimes to man. The deer "do not like" them. Sheep, cattle, horses, and man are often tempted. The deer inherit their protective likes and dislikes. This is instinct, which man has exchanged for other powers complicated and far-reaching. It is the exercise of one of these faculties which gives him pleasure in studying a creature so highly organized and so different from himself as the deer. The deer in the gratification of his appetite is as little as possible like the carnivorous animals. They tear and devour their food with a fierce lust which brooks no interference. Until their hunger is appeased they are considerably more dangerous to any

one who should attempt to interfere with them than is usually the case. Even man's gentle and faithful parasite, the dog, is wolfish then. How different are the ruminants! One of the processes of their digestion has given the generic name of their tribe to our psychology, so that "to ruminate" and "to reflect" have become synonymous. Let him who doubts the power of a strong and well-regulated digestion to contribute mental poise carefully observe cattle when chewing the cud. Even fierce Texas steers, almost as little civilized as anything that walks, then look quite sentimental, and their eyes have that "mother-look," a far-away, dreamy aspect which reminds one of Buddha and the associations of the lotus-flower. Let not him who has failed to observe this particular phenomenon reject it as fanciful. Only last summer I saw a herd of cattle engaged in the function described, and their look of aloofness and of fine abstraction, as they all stood with their backs to the storm chewing the cud, was most laughable. In their ranks a dignified seriousness prevailed. Boys and girls of our race, and occasionally "grown-ups," betray the rudimentary craving for the cud in the fervor with which they chew spruce gum and various other inferior substitutes. But man has only the faintest conception of what it may be like to chew the cud. The food of the ruminants is then digested to a certain degree, and doubtless is far more grateful to the palate. The fact that it is warm must be in itself a keen delight to a creature whose food as he gathers it is always cold. When the time for chewing the cud comes the deer desires most of all to be unmolested and serene. Even this primary delight is a thing which only an occasional philosopher of the human family

achieves. The prophetic soul then broods on things to come. The deer having gathered the carefully selected ingredients of his feast from far and near, may be said at this time to begin to realize the full satisfaction of a delicately selected *menu*. The service rendered to man by fire is no greater than that contributed to the deer's enjoyment by the partial digestion of his food and the marvelous change into something rich and strange. Indians in a crude way pay tribute to this alchemy. Certain tribes of the Southwest carefully save the contents of the deer's stomach and highly esteem this as an article of diet. The long-sustained accomplishment of this function with the deer must give them satisfaction which we can only crudely guess at. With all of man's ingenuity, he has never been able to accomplish this exact sort of sustained pleasure.

Mr. Edison is quoted as saying that all inquisitive and intelligent races and individuals crave a great variety in their food, and that this circumstance affords a good test of mental activity. A stupid person is content with a monotonous diet, getting his satisfaction mainly from the amount consumed; one more quick-witted craves greater range and novelty. Mr. Edison is reported to have expressed the desire "never to see the same dish twice." Applying this test to other representatives of the animal kingdom, we have found that the deer evinces great curiosity and discrimination in regard to the variety of its food. The range of its likes and dislikes is a wide one, and in this respect reveals a creature of versatility. St. Paul found the Athenians always "eager to hear or to tell some new thing"; they also loved novelty and variety. This breadth of interest in the deer, so far as the matter

of food is concerned, as compared with the cow's unvarying and monotonous interest in grass, or the porcupine's capacity of being satisfied with pine bark, indicates a mind (as well as stomach) craving diversified ingredients for sustenance. The deer's hobby is food, and it is *quality* primarily rather than *quantity* that gives him delight. This I trust I have to a reasonable degree made evident.

DOMES AND DOME STRUCTURE OF THE HIGH SIERRA.

BY G. K. GILBERT.

[Reprinted with permission from Bulletin of the Geological Society of America, February 10, 1904.]

General Character of the Domes.—In the granite areas of the Sierra Nevada are many hills and other summits having the form of domes. A few of the domes are symmetric, with approximately circular or oval bases, but the majority are somewhat one-sided or irregular. Associated with these domelike forms are closely related structures. The granite is divided into curved plates or sheets which wrap around the topographic forms. The removal of one discloses another, and the domes seem at the surface to be composed, like an onion, of enwrapping layers.

Theories of Relation between Structure and Form.—In explanation of these peculiar forms and structures two general theories have been advanced.* According to one theory, the separation of the granite into curved plates is an original structure, antedating the sculpture of the country and determining the peculiarities of form. According to the other theory, the structure originated subsequently to the form, and was caused by some reaction from the surface. Visiting the Sierra in the summer of 1903, I had these two theories in mind, and sought for characters by which they might be tested.

* H. W. Turner gives a digest of opinions, with references, in Proc. Cal. Acad. Sci., 3d ser., Geology, vol. 1, pp. 312-315. To his enumeration may be added Muir (Am. Assoc. Adv. Sci. Proc., vol. 23, pp. 61-62) and Le Conte (Elements of Geology, 4th ed., pp. 283-284), both on the side of original structure.

The dome structure appears not to extend downward and inward indefinitely, but to be limited to a somewhat shallow zone. The opportunities for observing this fact of distribution are not numerous, and, so far as I am aware, are found only on what are called half-domes—that is, domes that have been pared away on one side so as to exhibit the structure in section. The Half-Dome at the head of Yosemite Valley, which has been described



FIGURE 1.—SECTION OF THE HALF-DOME, SHOWING THE RELATION OF THE DOME STRUCTURE TO THE SURFACE AND TO JOINTS.

(The section is at right angles to the side shown in Plate XXX.)

by several writers, has been undercut in the development of the glacial trough of Tenaya Creek, so that its northwestern part has fallen away. The curved plates are there seen (figure 1) to occupy a very moderate depth, probably not more than fifty feet, while beneath them the rock is massive, except as vertical shear planes or joints have developed parallel to the flat face.

In another instance the estimated depth of the zone of dome structure is about the same, and in a third instance about one hundred feet. This downward limitation of the zone appears to me favorable to the second theory. If the structure were original, one would expect to find it continuing indefinitely downward and inward.

The structure is not restricted to domes. In some districts the walls of cañons, the sides of ridges, and the bottoms of trough valleys are characterized by partings approximately parallel to the surface. (See plate XXXI, figures 1 and 2.) These partings are not ordinary joints, but are distinguished by curvature, and their forms of

curvature are always adjusted to the general shapes of the topography. In the last respect they differ greatly from the structures produced by folding of strata. The curves of folded strata are diversely related to topographic features. A syncline may be found in a valley or on a hilltop, and an anticline may have either of these positions; but in dome structure each anticline coincides with a summit and each syncline with a valley. If the dome structure were original, we should expect that it would often be traversed discordantly by superposed drainage and dissection, and the fact of its accordance with features of dissection is therefore unfavorable to the theory that it is an original structure.

Where the granite is divided by a solitary joint into distinct masses, the dome structure of each mass is independent of the structure developed in its neighbor (figure 1). The curves of the dome structure do not cross the joint plane, and are thus shown to be newer than the joint. This phenomenon is not favorable to the view that the structure is original.

These considerations, as they were developed gradually in the field, led me to abandon altogether the hypothesis that the structure was developed either in the original constitution of the granite or at some early stage in its history, and to adopt the alternative view that it followed the production of the principal topographic features and was in some way conditioned by the surface forms.

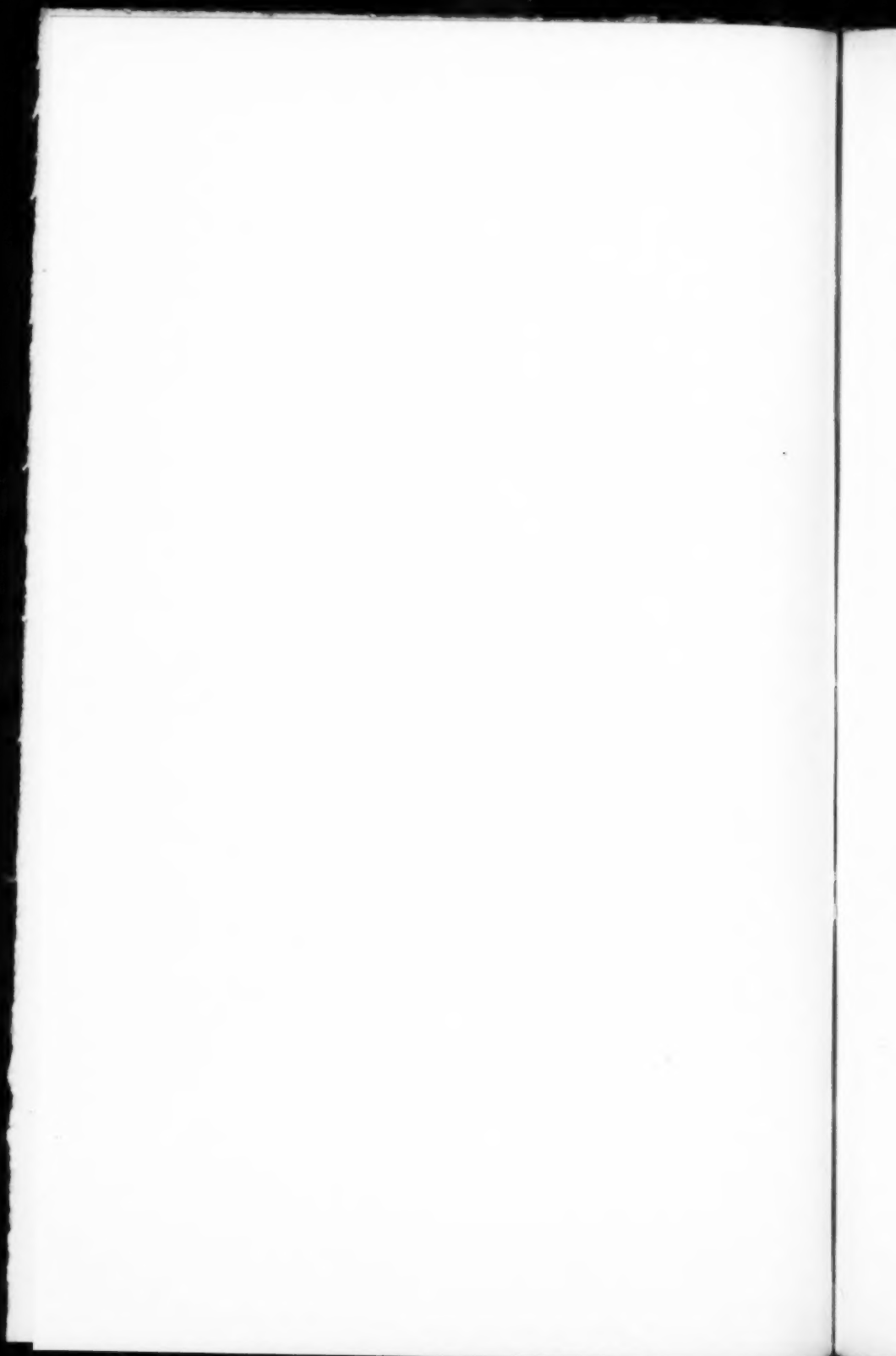
Relation of Dome Structure to Plane Jointing.—The dome structure appears to have been developed only in massive rock; that is to say, it is not found in rock which is divided by systems of parallel plane joints. Through

large areas the granite is divided by such joint systems into angular blocks (plate XXXII, figure 1), and in these areas the peculiar domes do not appear. I thought at one time that the two types of partings might be correlated with certain rock types, but this tentative generalization was afterward completely disproved. There are at least three prominent and broadly exposed types of granite in the Sierra which exhibit dome structure, and each of these is also characterized in some different locality by plane joints. It is easy to understand that the existence of either system of partings within the rock might, by facilitating the relief of strain, prevent the development of the other system, so that their mutual exclusiveness gives no indication of their relative age. But there is independent reason for assigning a greater age to the plane-joint systems. The dome structure, being conditioned by surface forms, is in each locality more recent than the topographic features; but the topographic sculpture is superposed on the systems of plane joints. Minor details of form show the influence of joint structure, but features of the rank of hill and valley are notably independent, their trends making all angles with the strikes of joint systems.

Joints and other division-planes are aids to erosion, whether the process be subaerial or glacial. When in ordinary jointing several sets of division-planes intersect and the rock is separated into blocks, weathering and transportation are both facilitated. In dome structure there is but a single set of division-planes, and the broad rock-plates are almost as resistant as a continuous mass. It results that the granite masses divided only by dome structure tend to survive general degradation, and often to stand forth as prominent hills.



FAIRVIEW DOME.



The Question of Cause.—In the effort to pass from the general phenomena of dome structure to its cause, I have found instruction in a comparison of the disrupting effects of expansion and contraction. When a forest fire sweeps over a rocky hillside the surfaces of rocks are rapidly heated and thereby expanded. The result is a sort of exfoliation. Flakes of rock, broad in comparison with their thickness, break loose and fall away (plate XXXII, figure 2). Thus the effect of surface expansion is to develop partings approximately parallel to the original exterior. The effect of contraction is illustrated by the cooling of a lava stream or dike. The cooling and contraction begin at the surface, and there develop a plexus of cracks, which are propagated downward or inward as cooling proceeds. These cracks are normal to the surface, and they separate the rock into normal columns. Comparing dome structure with these familiar types, it seems evident that it should be ascribed to expansion rather than to contraction, and we are led to inquire what natural process or processes may have expanded the Sierra granite at the surface.

Heating is naturally the first to suggest itself. Diurnal and annual changes of temperature may be dismissed at once, because their influence penetrates but a small distance. Secular changes penetrate farther, and may be quantitatively adequate. Secular warming after glaciation may have been a *vera causa*, but its discussion is complicated by the fact that the dome structure, or at least its principal part, antedated a large amount of glacial erosion. If the structure originated with Pleistocene climatic changes, the changes must have pertained to an early epoch of glaciation.

A second process developing expansive force is weathering, and here again future investigation may discover a true cause; but to cursory and inexperienced observation the granites of the Sierra in the glaciated district appear to be unaltered.

A third process—one as to which we have no direct knowledge—is dilatation from unloading. When the granite came into existence by the cooling of the parent magma it was buried under a deep cover of older rock. Because of that cover it was subject to compressive stress, and that compressive stress was of course balanced by internal expansive stress competent to cause actual expansion if the external pressure were removed. As in course of time the load was in fact gradually removed, the compressive stress was diminished and the expansive stress became operative. *Pari passu* with this release of expansive stress there was cooling, and the effect of the cooling was to diminish expansive stress; and the result may have been complicated by other stress factors. So long as the pressure of superjacent material was great, the equilibrium of stresses was approximately adjusted by flowage; but as the descending surface of degradation approached the granite, flowage diminished, and it ultimately ceased. The final adjustment was by change of volume, the change being contraction, if lowering of temperature was a more important factor than relief from load, and expansion, if relief from load was the more important factor. In the latter case (which I regard as the more probable) the parts of the granite successively exposed at the surface were in a condition of potential expansion, or tensile strain, and that strain would be relieved by the separation of layers through the develop-

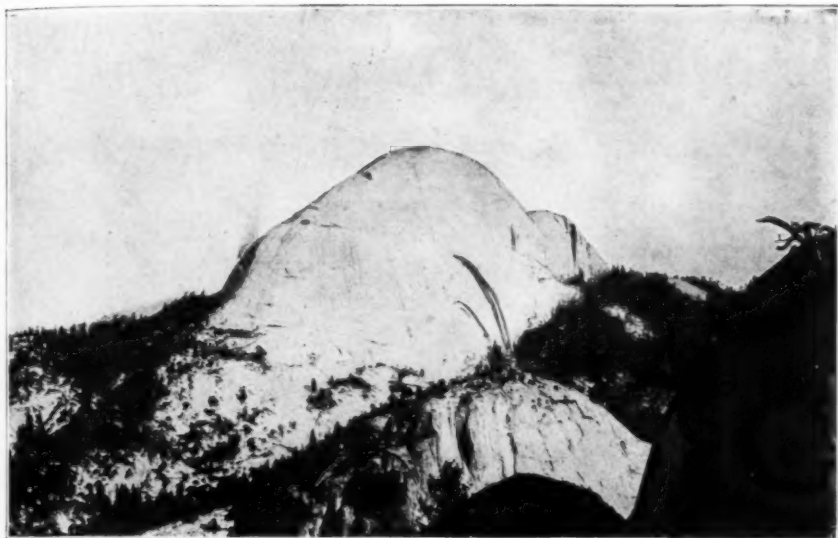


FIGURE 1.—HALF-DOME AT EAST END OF YOSEMITE VALLEY (SEEN FROM THE SOUTH).

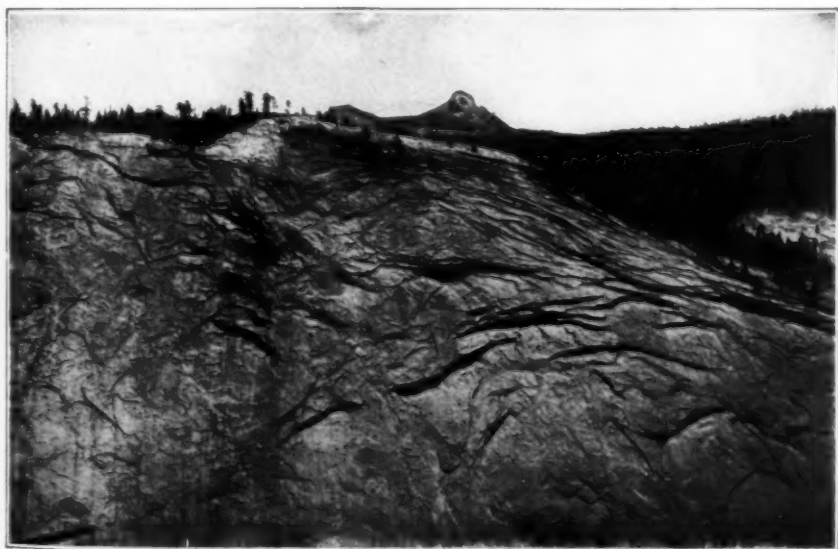
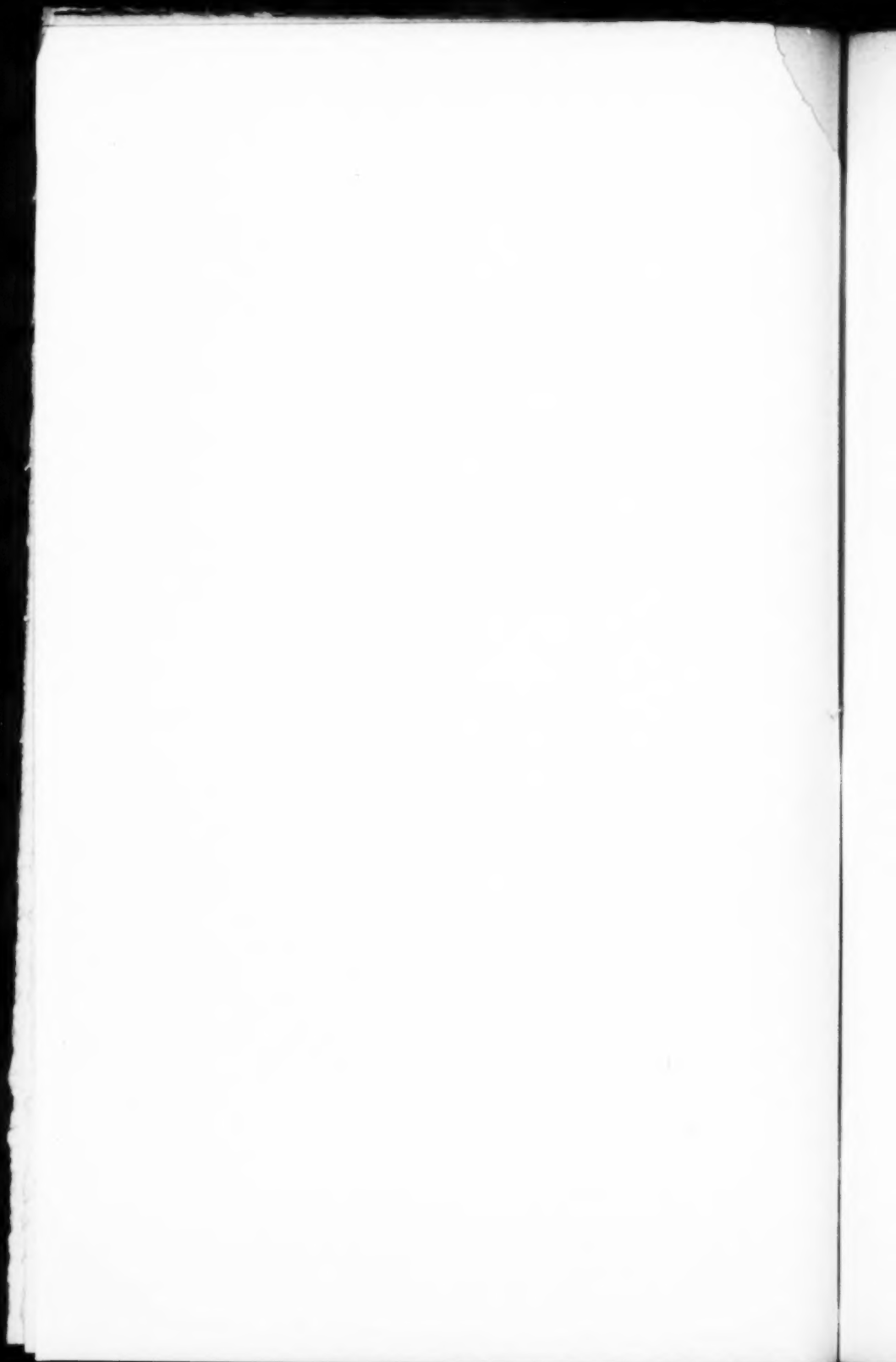


FIGURE 2.—PART OF SOUTHEAST WALL OF LITTLE YOSEMITE VALLEY, SHOWING DOME STRUCTURE.

DOME STRUCTURE IN THE YOSEMITE REGION.



ment of division-planes approximately parallel to the surface.

While it is possible that all these processes are concerned in the production of the structure, I regard it as more probable that some one cause is dominant. The data at hand seem to me not to warrant a confident selection from the three suggested, but if the truth lies among them, there should be little difficulty in obtaining additional facts of crucial character. Certain domes, some of which I saw at a distance, are supposed to be outside the area of Pleistocene glaciation. If they exhibit the characteristic structure, and are really extraglacial, their characters can not plausibly be ascribed to secular changes of climate. It should be possible to determine the relation of weathering to the structure by petrographic study of outer and inner layers at such a locality as that shown in plate XXXI, figure 1, where glacial erosion has exposed a fresh section.

Explanation of Rounding.—The view in plate XXXI, figure 1, was selected as an illustration of dome structure because the plates and partings of the structure are there shown in natural section. In the making of that section the dominant erosional process was glacial attrition or grinding. While this process has been of great importance in the sculpture of the higher parts of the Sierra, it is probably second in rank to glacial plucking or quarrying; and glacial degradation as a whole has been small in comparison with subaerial degradation. In glacial plucking and in most phases of subaerial erosion the most active attack on rock traversed by dome structure is by way of the partings, and the broad outer faces of the granite

plates are comparatively unaffected. The removal of the rock is essentially through a process of peeling. One layer at a time is carried away, and the surface at each stage coincides approximately with one of the partings.

Whatever the cause of the dilatation producing the partings, they are formed in succession from without inward. For each one the determining strains are themselves conditioned not only by the form of the outer surface, but by the form of the last-made parting. Parallelism is not perfect, but approximate, and the departures from strict parallelism are of such nature as to reduce or omit angles and other features of irregularity. The inner partings reflect only the general features of the external sculpture. As peeling progresses and the zone of competent strain moves inward, the outer surfaces are successively more and more simple in contour, and the newly developed partings are endowed with still greater simplicity.

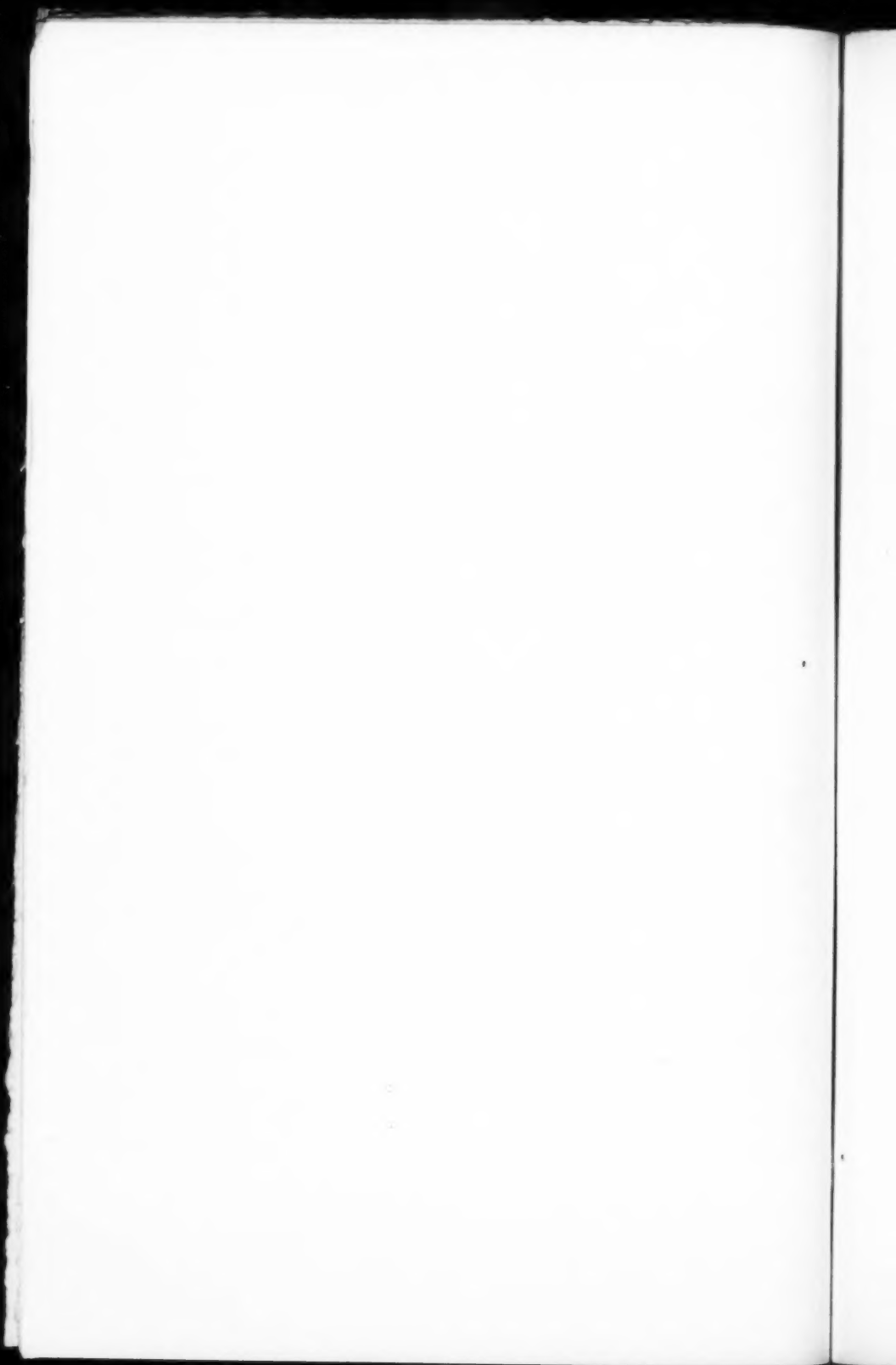
Opposed to the rounding process is corrasion. The attrition of a detritus-armed stream or glacier saws through the rock-plates with little regard for the presence or absence of partings. By so doing it creates discordant elements of topography and modifies the conditions under which the expansive strains are developed. In the Sierra the effects of glacial corrasion are at present conspicuous. By the corrasion of the Tenaya trough the base of Half-Dome was sapped, so that a part was sheared off by gravity, producing a vertical flat face (figure 1), in which the structureless nucleus was exposed. In this face the "dome structure" was developed, but, being conditioned by a plane outer surface, the new partings are plane (except at the edges), and thus simulate ordinary plane joints.



FIGURE 1.—HILL SOUTHEAST OF EMERICK LAKE, UPPER MERCED BASIN, SIERRA NEVADA.



FIGURE 2.—A SYNCLINE IN DOME STRUCTURE.
DOME STRUCTURE NEAR EMERICK LAKE.



EXPLANATION OF PLATES.

PLATE XXIX.—*Fairview Dome.*

This dome, sometimes called Tuolumne Monument, is in the Sierra Nevada, west of Tuolumne Meadows. In common with the surrounding country, it is of granite. It stands at the edge of a plateau, its summit being 800 feet above one base and 1,300 feet above the other; it is not above timber-line, but is bare of trees, because in the absence of joints they get no foothold. Pleistocene ice covered it, flowing from right to left and from distance to foreground.

PLATE XXX.—*Dome Structure in the Yosemite Region.*

FIGURE 1.—Half-Dome, at east end of Yosemite Valley, seen from the south; from a photograph by C. D. Walcott.

The view shows the convex side of the dome, in which the structure closely parallels the surface. The height above the nearer base is about 1,500 feet; above the farther base at right 900 feet. The dome was covered by Pleistocene ice, which moved from the right and from the distance. The surface is treeless, because devoid of joints. No rock but granite is visible in the view.

The text contains a cross-profile of the dome.

FIGURE 2.—Part of the southeast wall of Little Yosemite Valley, showing dome structure.

The rock is granite. The valley is deeply incised in a plateau of relatively mature topography. Pleistocene ice covered everything shown in the view except the distant crest, but the glacial degradation of the upland was slight.

In the upper parts of the cliff the dome structure parallels the surfaces of the upland topography; lower down it parallels the cliff face.

PLATE XXXI.—*Dome Structure near Emerick Lake.*

FIGURE 1.—Hill southeast of Emerick Lake, Upper Merced Basin, Sierra Nevada.

The hill, which is about 250 feet high, is the terminal and culminating points of a long ridge of granite. The dome structure in the ridge is anticlinal, changing in the hill to the inverted canoe form. At the extreme right the convex or anticlinal curvature is seen to merge into a concave or synclinal curvature, better shown in figure 2. The hill was deeply buried by a glacier moving from left to right. Glacial erosion made the rock basin occupied by the lake and excavated the hillside so as to expose the dome structure in partial section.

FIGURE 2.—A Syncline in dome structure.

Emerick Lake (Figure 1) lies out of sight, just beyond the granite slope at right. Its outlet, crossing the sill without notable incision, descends to the foreground at left. Structure and topographic configuration are in harmony. A syncline pitches toward the foreground and also (slightly) toward the lake. At the lip of the lake basin the cross-section is synclinal and the longitudinal section anticlinal.

PLATE XXXII.—*Joint Structure and Fire-Spalling.*

FIGURE 1.—Jointed granite in Kuna Crest, Sierra Nevada.

The granite is traversed by four systems of parallel plane joints. The cliff is at the head of a glacial cirque, and the sloping plain above it belongs to preglacial topography. The general forms of cirque and plain are independent of the attitudes of the joint systems. Compare with Plate XXXI, and observe the contrast between joint structure and dome structure.

FIGURE 2.—Granite boulder from which spalls or flakes have been riven by the heat of forest or meadow fires.

The spall at the left, still standing in position, illustrates the approximate parallelism of fractures thus produced to the exterior surface. Probably in this case the strong heating was at the side and local—as the heating would be, for example, if the log at the right should be burned—and the small size of the spall was determined by the localization of the heat.

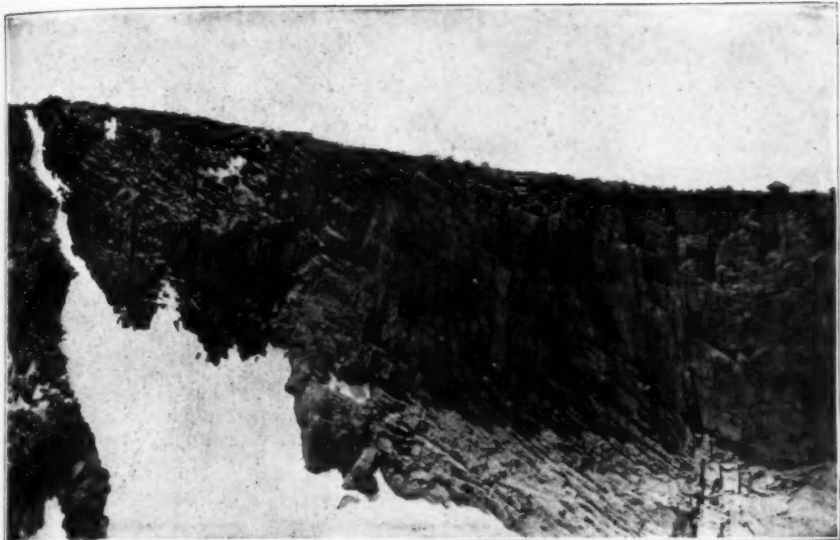
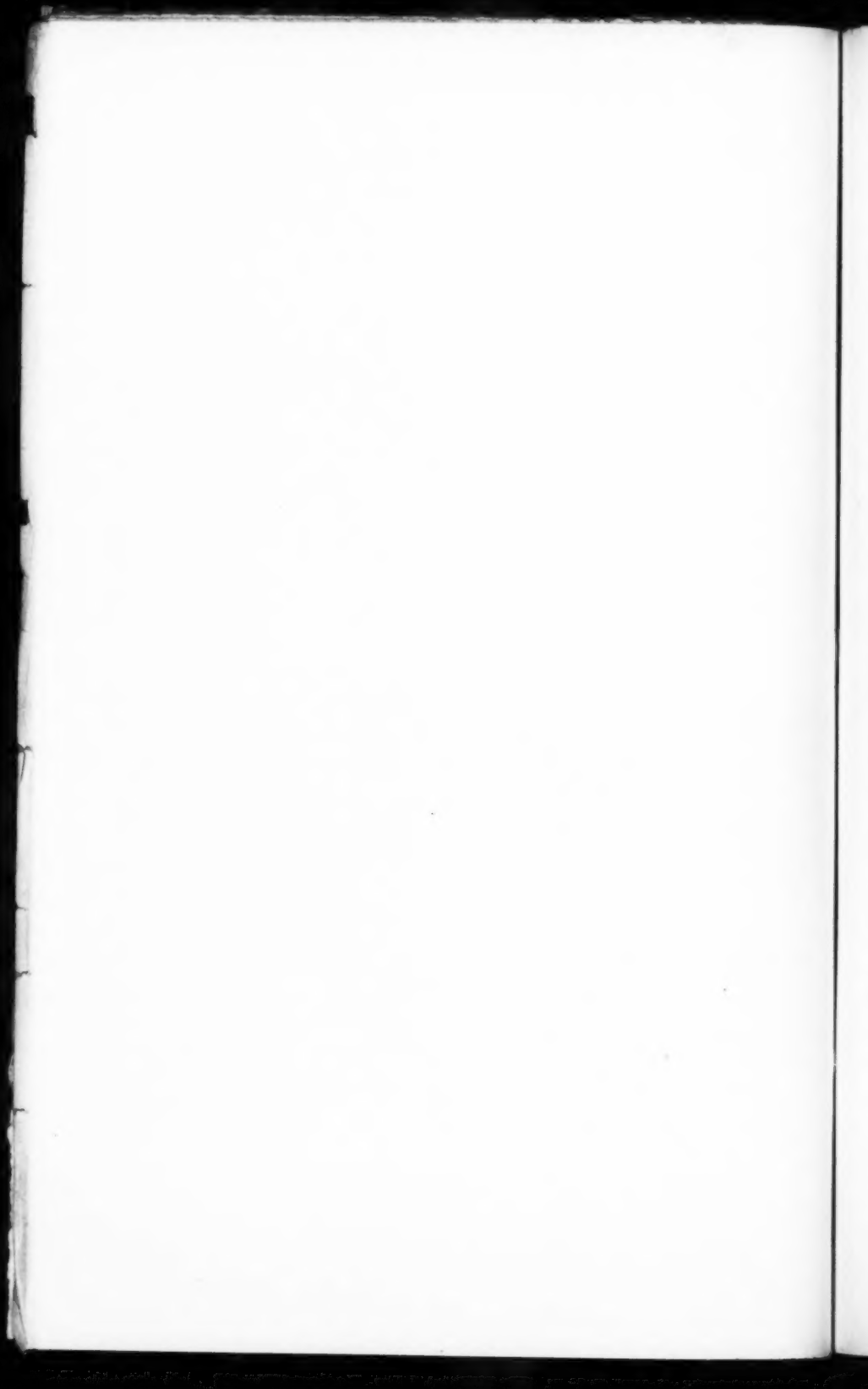


FIGURE 1.—JOINTED GRANITE IN KUNA CREST, SIERRA NEVADA.



FIGURE 2.—GRANITE BOULDER FROM WHICH SPALLS OR FLAKES HAVE BEEN RIVEN BY THE HEAT OF FOREST OR MEADOW FIRES.

JOINT STRUCTURE AND FIRE-SPALLING.



SOME ASPECTS OF A SIERRA CLUB OUTING.

BY MARION RANDALL.

Mountain trips the world over bear a certain intrinsic resemblance to one another; the lost trail, the bridgeless river, the firm-willed beast of burden, the camp-fire that will not burn,—all these are tribulations to test the qualities of the mountaineer as well in the Cevennes as in the Sierra. But there is one feature of a Sierra Club outing which tends to make it unique, a feature much derided by the doubting Thomas whom you wish to convert, much defended by you if you are a loyal Sierran,—namely, the “crowd.”

It sounds rather alarming at first—to camp for a month with a party of one hundred and fifty persons, strangers for the greater part, gathered from all quarters of California and from distant points throughout the world, representatives of every profession, every science, every art, who have only one common bond, the love of nature. They are very queer-looking people too, some of them. They bear a few hallmarks of civilization, it is true; they take off their hats when they speak to you, and smoke pipes and cigarettes; they possess tooth-brushes and mirrors and back-combs,—but you never heard of anything like them in song or story nor saw them upon the stage.

You rashly decide that you don't care very much about making indiscriminate acquaintances. You have a few tried friends in the party, and, though they strongly

resemble the other desperadoes, you have a comfortable remembrance that but a few days ago they were orderly and respected citizens, that they still possess bank accounts and have reputations to maintain. But soon you begin to realize that some of these old friends are not quite the companions you would have chosen for the woods. Your friendship is perhaps more superficial than you thought it, or is based upon some common interest which is absent here, and while it costs you something to admit it, they jar upon you. And then you discover that the unshaven gentleman in spotted khaki with a scratch on his nose has seen the same beauty and thought the same thought that you have, and you know he is a kindred soul, though you don't like to acknowledge the kinship.

As day after day passes, and you learn to waive ceremony and accept the easy comradeship of the trail, you find that the bearded ruffian is a learned scientist, the untidy girl in the strange bonnet is an artist of promise, and the neat man in khaki who quotes Shakespeare is one of the packers, and you begin to distrust your powers of discrimination. At last you make the discovery that you yourself look as queer as your neighbor. You are a Sierran by that time, body and soul, ready to find your place in the socialist's Utopia which you inhabit for a few short weeks. You learn to stand in line behind a packer and see him helped first to the dishes of which you mean to partake; and when Charley Tuck, the canny heathen cook, stops his horse beside you as your weary feet plod along the trail, and opening a blackened tin bucket inquires blandly, "You like-a ham-bone?" you accept the offered delicacy with grateful effusiveness.

But, strange to say, even in this democratic society

the aristocrats are sooner or later bound to appear. There is the aristocrat of cleanliness. On the dustiest trail, over the smokiest camp-fire, he is seen always fresh and immaculate. He must have been born clean, for he spends no more time in the washing of face and raiment than the rest of us do, and yet the result is so different! The proverbial leopard who cannot change his spots is bound by no more rigorous law than the aristocrat who cannot acquire any; stainless he is and stainless he remains by no fault—or virtue—of his own, but he is not looked on with favor by the spotted many.

There is the aristocrat of leg and lung, the "hiker," so called, who walks up perpendicular cliffs like a fly, never misses the trail, and always reaches camp first. He is harmless, but is not generally loved, for he is a little overbearing and given to much talking of a certain catalogue of hours and distances which he keeps in his mind and calls his record.

Then there is the aristocrat of good-fellowship. He can hike too, if he wants to, but he knows that one hour of the trail is worth two in camp and that "to travel hopefully is better than to arrive." He may come late into camp, but you may be sure he will come with a smile and be ready on the instant to help cook dinner or to carry half the dunnage-bags to their abiding-places for the night. He will cobble your boots for you, he will mend your clothes, and lend you his blankets when yours are lost; and though he will talk very little about it, his name will be found on the highest peaks and the trout will have reason to remember his rod.

Life in the main camp is a degree more formal than when on the trail. The main camp is a place where

Charley Tuck has stoves on which to cook, where you have a tent in which to dress, and where you get fresh bread instead of galetta. Your days are less strenuous there. Breakfast is obtainable from six until nine, and you do not have to walk abroad unless you wish. Nevertheless, you do not often lunch in camp, for the call of the trail is strong, and the desire to be up and doing leads you daily into the realm of unexplored country which surrounds you.

Dinner is quite a function. It is there, perhaps, that you catch most fully the charm, the picturesqueness, and the jollity of the outing. Behind the long table stand eight girls dressed in the brightest and best their dunnage-bags can offer—shirt-waists fresh from the river, skirts a shade longer and cleaner than the well-worn regimentals, and caps, aprons, and kerchiefs of gaudy bandanas.

Each girl has charge of a kettle and a spoon, and for an hour or more hungry people file past the table for a second, third, even a fourth, helping,—soup, fresh meat, potatoes, bread and butter, rice, tomatoes, pudding, gingerbread, tea and coffee *à la* tin cow, surely a meal fit for the gods. They think so anyway, these sunburned people in their gay sweaters and bandanas, as, laughing and joking the while, they move along the line, turn from the table with filled plate to join a chosen group of diners on the ground near by, busily wield fork and spoon, and then patiently join the line again for a further supply.

A lazy hour follows until the camp-fire is built and you gather round its circle of red light. The entertainment offered you may be grave or gay, quiet or noisy, but it is never twice alike. Songs, instrumental music, impromptu rhymes, original ballads, and talks on many topics relating

to the mountains and the purposes of the club are among the things you hear nightly, and once at least in the course of the trip a grand vaudeville performance calls forth all the talent in camp. These camp-fire gatherings hold a place among your dearest recollections of the summer. The faces that you have seen illumined by the leaping flames can never be indifferent to you, and wheresoever you may meet them, in crowded streets or dingy offices, or in the heat and babble of an afternoon tea, they will bring to you a little thrill of joy as if you caught again a breath from the pines.

Very closely linked with your memory of these general gatherings lies the remembrance of the smaller circle that lingered about the embers of the commissary fire after a day spent in conquering a mountain, or of the little well-guarded fire built nightly within your own precincts by you and your chosen camp-mates, cheerful little altars, whereon the happy fellowship of the day burned to a stronger and closer friendship. Each camping-place of the trip, whether it be occupied for one night or twenty, is arranged after the same general plan: the commissary—kitchen, dining-room, and drawing-room in one—is placed in the center, with the men's camp on one side and the women's on the other. With these boundaries once fixed you are free to make choice of your individual camp. You may elect to camp alone or to join a party of friends; you may choose a site close to the commissary or one on the very outskirts; but if you are wise you will select a spot not too far from the center of things, where, while secluded, you still can catch the glimmer of a dozen clustering fires or hear now and then a merry laugh ring out into the stillness.

One of the charms of the life is its freedom from responsibility. The packing of your dunnage-bag when on the march is the only duty you really have to perform, though some prefer to assume that of washing their clothes (a task generally intrusted to Charley Tuck's brother heathen), but even this becomes almost a social function. By common consent the day after you arrive in camp is devoted to a general washing. Shortly after breakfast the girls return to their camp, and procuring a pile of clothing, go down in groups of three or four to the river. As the morning's programme includes a bath, the favorite costume for laundry work is a bathing suit. It is a pretty though often a humorous sight to see the lassies lined up along the river-bank diligently scrubbing and sousing until the garments have assumed that appearance of uniform griminess which passes in camp for cleanliness.

Short excursions of two or three days duration, lunches and teas with a dozen or more guests are frequent, and are a pleasant element in the social life of the camp. The little picnic parties, where five or six friends elect to spend the day in one another's company, are particularly delightful. You build a fire at lunch-time and have tea or soup or chocolate wherewithal to augment the commissary lunch, and sometimes, if luck attends the fisherman, you have trout.

There seems to be a prevailing impression that the entire club travels day in and day out in one indissoluble "gang." Nothing can be further from the fact, for save when climbing a mountain you travel to suit yourself. You start at whatever hour you wish, walk alone or in company, and spend the whole day or a few hours in

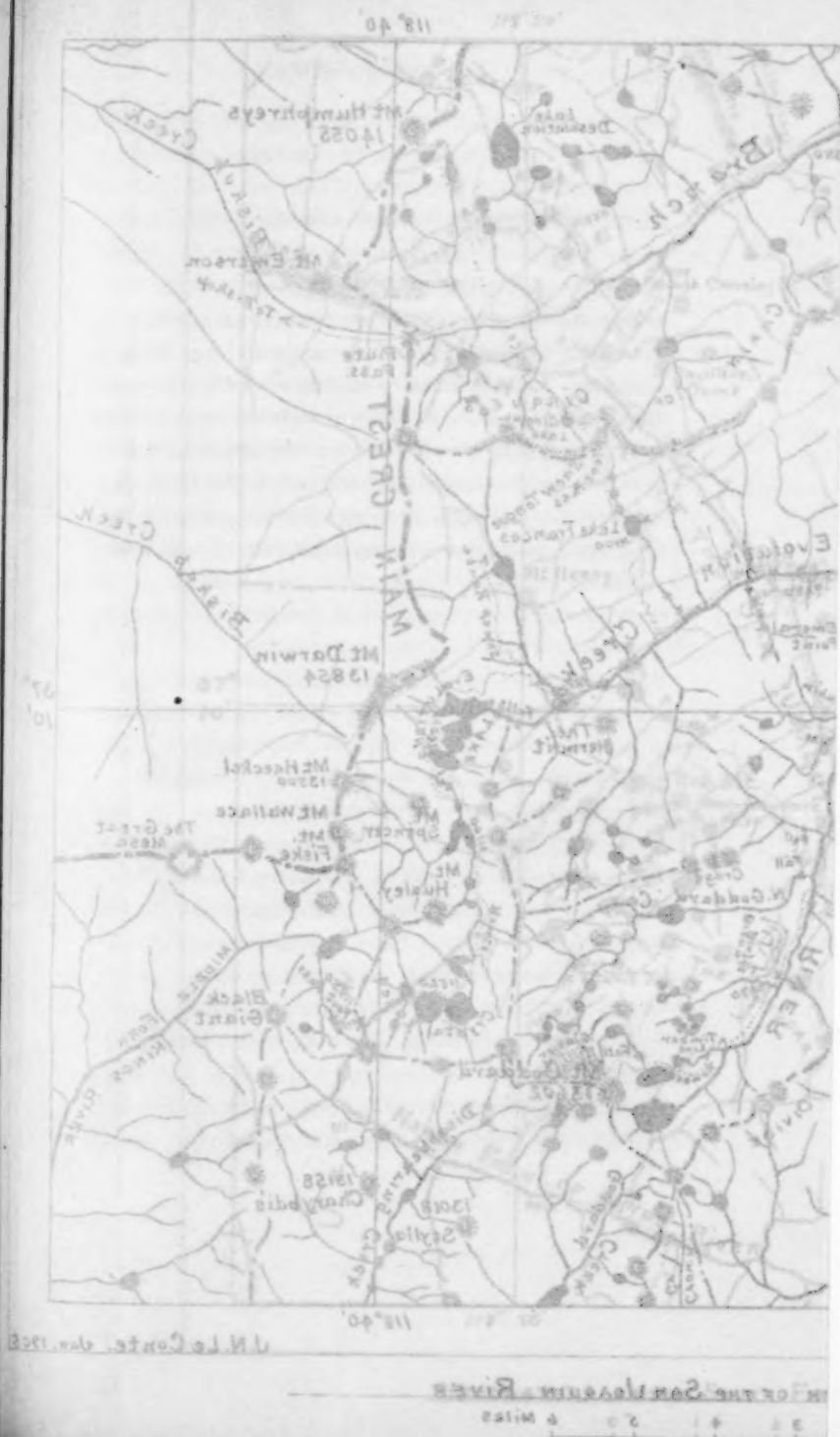
covering the distance. It is possible to travel all day without meeting a sign of a fellow Sierran save his footprints in the trail.

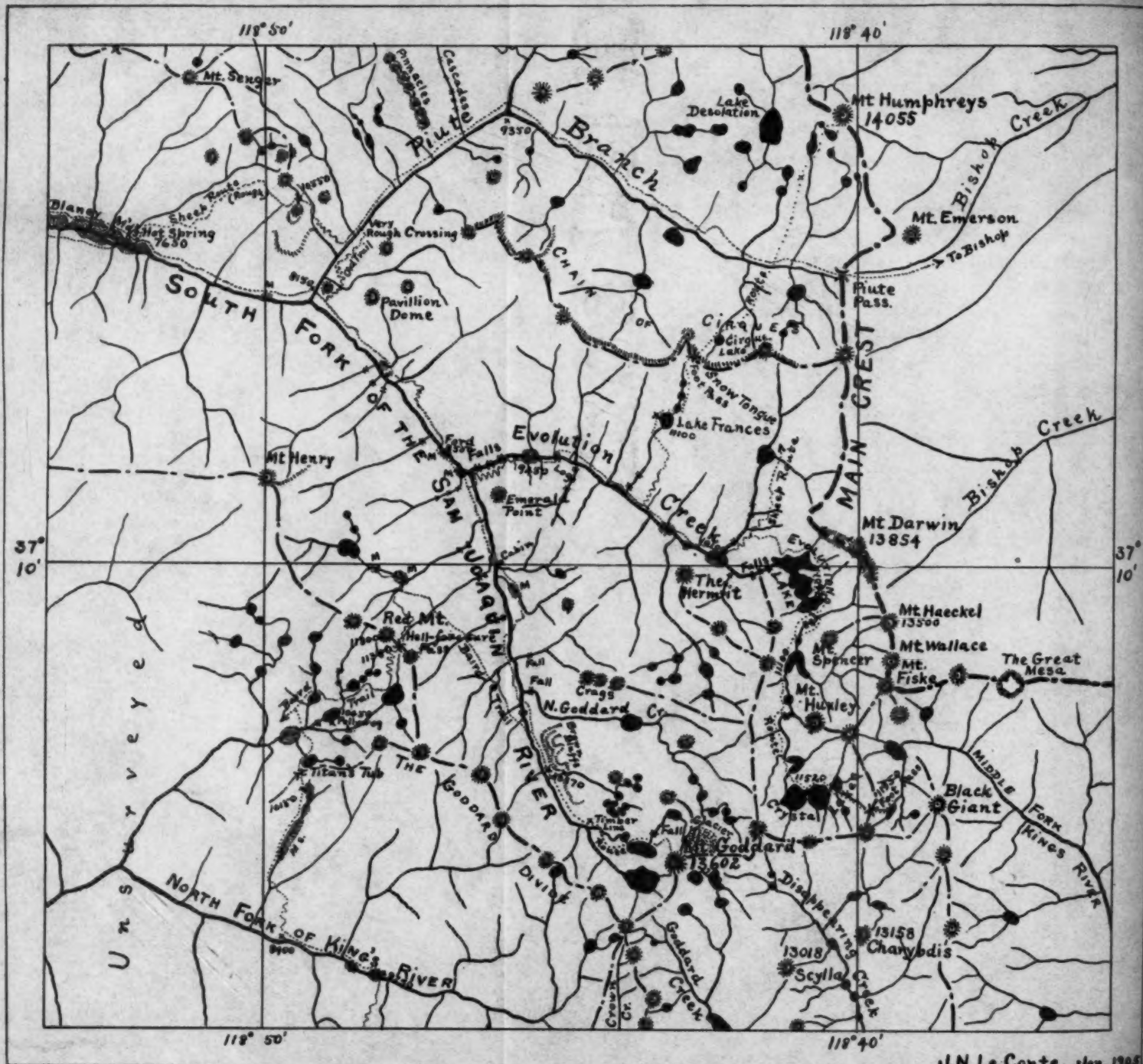
And what a spell the forest weaves for you when you are alone! Each turn of the trail has its message. The little woodland creatures, the birds and squirrels and chipmunks, so suspicious of the sound of laughter and voices, look at you with their quick, bright glances and hardly seem to think it worth their while to hide. After all, these are the moments which live. The grandeur of the summit peaks thrills you into awed stillness while your eyes behold it, yet, like remembered music, when the image returns to the mind, something of the stir and the exaltation is irrevocably lost. But the glint of the sun on the river, the meadow knee-deep in flowers of the shooting-star, the creeping shadows and the lingering light in the forest at nightfall,—all these little half-noticed charms of the wayside sink deep into the memory to flash forth again, fresh and undimmed, with a certain haloed brightness.

The Sierra Club has great and noble purposes, for which we honor it, but besides these its name has come to mean an ideal to us. It means comradeship and chivalry, simplicity and joyousness, and the care-free life of the open. You may have marred that ideal often by word or deed, for you are human and must needs carry your follies and weaknesses with you even to the woods; but you must be foolish and weak indeed not to bear home something of the strength and purity and beauty amongst which you have lived.

For a little while you have dwelt close to the heart of things. You have lain down to sleep in a wide chamber

walled about by mountains rising darkly against the lesser darkness of the sky, where stars looked down on you between the pines, stars more brilliant than on the frostiest night in the lowland; you have awakened to the laughter of streams and the songs of birds. You have lived day-long amid the majesty of snowy ranges, and in the whispering silences of the forest you have thought to hear the voice of Him who "flies upon the wings of the wind." And these things live with you long after the outing has passed and you are back in the working world, linger even until the growing year once more brings around the vacation days, and you are ready to turn to the hills again, whence comes, not only your help, but your strength, your inspiration, and some of the brightest hours you have ever lived.





HEADWATERS OF THE SOUTH FORK OF THE SAN JOAQUIN RIVER

0 1 2 3 4 5 6 Miles

THE EVOLUTION GROUP OF PEAKS.

BY J. N. LE CONTE.

37°
10'

Hidden away on the northern slope of the Goddard Divide, and in the midst of the wild region which forms the angle between that range and the Main Crest of the Sierra, is an interesting group of peaks and lakes almost unknown to the Sierran traveler. Except for wandering sheepmen, the region was first visited, so far as I know, by Mr. Theodore S. Solomons in 1893. He was so strongly impressed by the beauty and wildness of the scenery, and by the unity, so to speak, of the group of Main Crest peaks, that he named it the Evolution Group, giving to the principal summits the names of the great evolutionists of modern times. But further than a set of notes of his trip left in the library of the Sierra Club he has not published an account of the region, and for that reason I undertake a short description myself, in the hope that others may be led into a region which offers the easiest approach to the giant summits of the Goddard Divide.

The locality named is drained by what is known as the Middle Branch of the South Fork of the San Joaquin River, a name clumsy and objectionable to the last degree. I therefore propose to reject it, the sheepmen to the contrary notwithstanding, and refer to it as Evolution Creek for the present, or till a more suitable name can be decided on by the Sierra Club's committee which has this matter in charge. The junction of Evolution Creek and the South Fork of the San Joaquin is difficult to reach from

the south or west on account of the high spurs which surround the head-waters of the latter stream. It is therefore advisable to approach it from the north by following up the South Fork from Blaney Meadows. These meadows, which are the natural starting-point for all trips in the upper San Joaquin Basin, are reached either by the Red Mountain Trail from Pine Ridge, forty miles to the southwest, or by the Miller Trail from the Yosemite region, eighty miles to the north.

It was my good fortune last summer, after attending the dedication of the Sierra Club Lodge in Yosemite Valley, to start on such a trip in company with Dr. G. K. Gilbert, of the United States Geological Survey. We traveled the distance from Yosemite to Fish Camp by stage, and there met our packer and his pack-train all ready for the long journey southward. During the stage journey I was so unfortunate as to lose the box containing my photographic plates, so for what illustrations I offer here I am indebted to my friends. I need not relate the details of the long journey eastward and southward, for these have been already given in a previous article.* Suffice it to say that we followed the regular route by the Beasore and Jackass Meadows to Miller's bridge, then up the valley of the South Fork of the San Joaquin, over Mono and Bear Creek, finally reaching Blaney Meadows on the 13th of July.

Here we met Messrs. James Hutchinson, Edward Hutchinson, Charles Noble, and Albert Whitney, all bent on exploring the region about Mt. Humphreys. As our routes lay in the same direction, it was decided to travel

* "The Basin of the South Fork of the San Joaquin River." *SIERRA CLUB BULLETIN*, Vol. II, p. 249.

together as far as possible. Accordingly, on the morning of the 15th we started up the cañon of the South Fork, and about four miles above reached the north branch of the river, which drains the Humphreys country, and carries nearly half the total volume of the stream. It comes booming across the boulder-strewn flat at the mouth of its cañon, and at first sight appears to be an almost unsurmountable obstacle to further advance. Fortunately there are fragments of a log jam a short distance above, and on this we were enabled to get across. Then a rope was thrown over, and we succeeded in leading our animals through the rough channels.

From this point to the base of Mt. Goddard the San Joaquin Cañon is truly magnificent. It is not as deep as many other of our great river cañons, but it has the peculiarity of lying wholly within the metamorphic rock. The sides are almost perfectly bare, and the many beautiful cascades which pour over them contrast most strikingly with the black walls. The trail from the Blaney Meadows to a point four or five miles above the north branch lies on the eastern side of the stream, and then crosses to the west side by a good ford. At the crossing we stopped for lunch, and then pushed on up the river. A short distance above the ford Evolution Creek enters the cañon by a magnificent fall. There is no well-marked point at which the trail up its cañon branches from the main trail, but by recrossing the South Fork above the junction, and searching along the base of the cliffs, we soon found it starting up at the very base of the fall.

The trail at first is rocky and steep. It has been but little used of late years, and so many trees have fallen across it that traveling is rather slow. As we rose the

view across the San Joaquin Cañon became finer. We could see not only to the top of the walls, but far above to the snowy summits which fed the scores of little cascades. Down the cañon we could look for miles, over the country through which we had come, and then up the gorge till it became lost in the wilderness of peaks which form the Goddard Divide. The trail kept close to the stream, and so we climbed past cataract after cataract, till suddenly the floor of our cañon flattened out, and we entered a magnificent glacial valley. This is one of the most perfect examples of a hanging valley that I have ever seen. The floor at its lower end is fully a thousand feet above the San Joaquin Cañon, yet the volume of water it carries is even greater than that of the main stream above their junction. Just above the falls is a large meadow, farther up the customary U-shaped glacial valley covered with timber, and at its head rises a huge flat-topped peak—Mt. Darwin. The meadow is wet and cold,—in other words, it is not the best of camping-places,—but as night was coming on we were forced to "put up" there and make the best of it.

Next morning, after an early breakfast, we took our way up this magnificent valley. A half-mile above camp our scarcely distinguishable trail crossed to the north side of the creek, and continued on that side the remainder of the distance. The traveling was fairly easy, though time was often lost in searching out a route through the confusing *roches moutonnées*. Off to the south could be seen great peaks of the Goddard Group, peaks of black and red slate streaked with snow, and even some with "baby glaciers" at their feet. Standing well out from the south wall some distance above is the Hermit, a

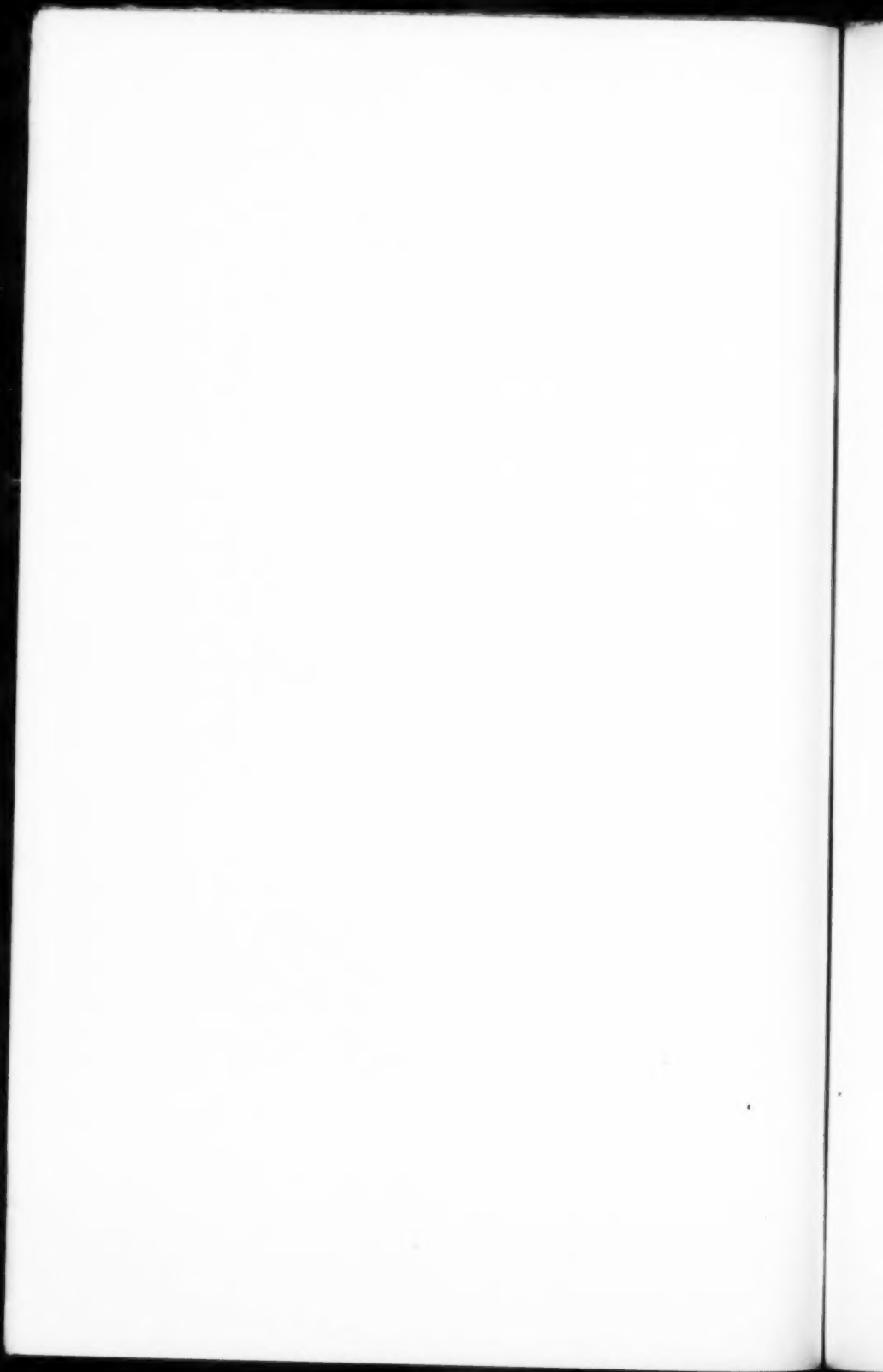


Mt. Darwin.

EVOLUTION BASIN.

From photographs by J. S. Hutchinson, Jr., 1904.

The Hermit.



wonderful pyramidal rock of clean-cut white granite. Though not quite so large, it reminds one of the East Vidette—that noble monument on King's River. At the head of the cañon, blocking the whole view in that direction, is the colossal Mt. Darwin. Near the head of the cañon our companions, Messrs. Hutchinson, Noble, and Whitney, left us and proceeded by a fairly well-defined trail up the northern side in the direction of Mt. Humphreys, while we went on to the foot of the Hermit and pitched camp.

At this point the valley proper ends in an immense amphitheater, into which streams from all directions tumble in foaming cataracts. The principal one comes down from a shelf at the very foot of Mt. Darwin. Two others enter from either side of the Hermit, while a fourth large one, upon which we were camped, drains the great area to the north of Mt. Darwin. In the afternoon of that same day Dr. Gilbert explored the ridge to the north, and on the following day he and Kanawyer, the packer, climbed a peak back of the Hermit.

On the morning of the 18th, he and I got a fairly early start, determined to explore the head-waters of the main stream. This, as I have said, drops from a shelf at the base of Mt. Darwin, and the first plunge is over smooth glaciated granite at an angle of about forty-five degrees. It was therefore impossible to follow up the stream itself, but fortunately a comparatively easy route was found just to the north. At first we followed an old sheep-trail, but soon abandoned it when it bore off to the northeast. About a thousand feet above camp we reached the level of the shelf, and climbing over a low ridge came suddenly upon the beautiful Evolution Lake and

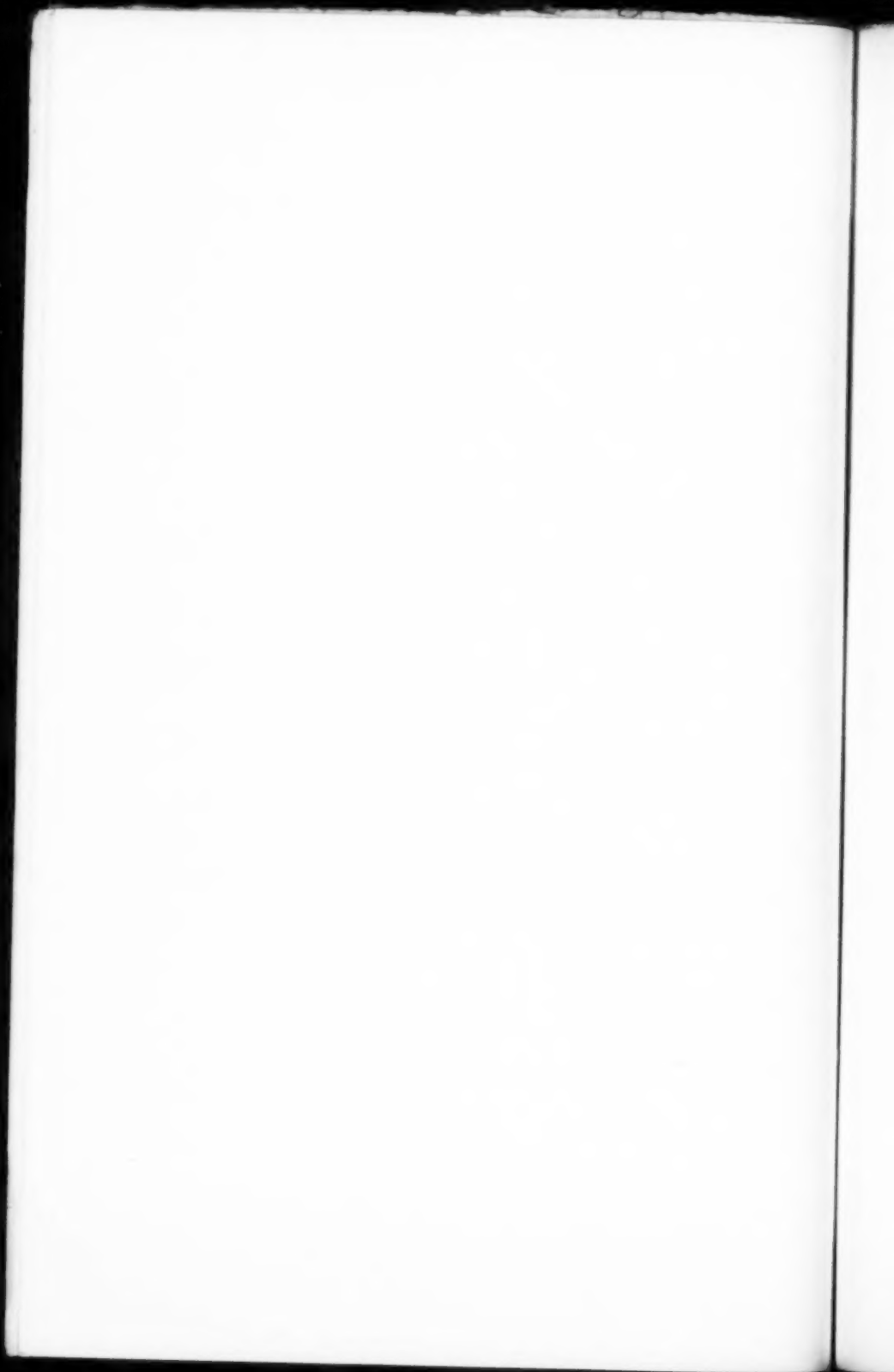
all its magnificent setting of mountains. It was nestled at the very base of Mt. Darwin, whose crags rose almost from the waters' edge four thousand feet toward the blue sky. Immediately above the lake stood two most strikingly gothic peaks,—Mt. Spencer, near at hand, and Mt. Huxley, farther up. The latter is really a wonderfully picturesque piece of mountain sculpture, and though much higher and finer than Mt. Spencer, its much greater distance gives the appearance of two peaks almost exactly alike in height, form, and symmetry.

The view across the lake and back into the well-nigh untrodden region above was certainly enough to thrill the nerves of a Sierra lover. There was so much right at hand to do, and so little time in which to do it, that it was difficult to choose a field for the day. Mt. Darwin, close at hand, was over fourteen thousand feet high, and one of my oldest friends. Mt. Fiske, at or near the junction of the Goddard Divide and the Main Crest, was a point I had always longed to reach, but the Goddard Divide itself offered the most inducements, for, so far as I know, no one had followed the stream to its source and looked down the savage cañons at the head of the Middle Fork of King's River. So bidding good-by to Dr. Gilbert, whose tastes were geological, and who wished to study the wonderful glacial history written about the lake's margin, I struck out alone up the creek, which above this point flows from the south, parallel with the Main Crest. Evolution Lake itself is over a mile in length. It is very irregular in shape, with narrow straits and long peninsulas, and picturesque little islands dotting its surface. At its head is an amphitheater, and the stream tumbles into it by another splendid series of cas-



EVOLUTION LAKE.

From a photograph by T. S. Solomons, 1893.



cares. Here it was desirable to cross the creek and follow the west bank to the next shelf above, where another large lake lies like a jewel in its circular rock setting. Entering this lake from the east is the small stream which issues from between Mts. Spencer and Huxley, and drains the Evolution Group proper. About its head are the Main Crest peaks Haeckel, Wallace, and Fiske, but none can compare with the noble peak (Mt. Huxley) in the foreground about whose base the creek cuts.

Mr. Solomons, as I understand it, went as far as this tributary, and climbed some of the peaks at its head. The region at the head of the main stream he did not explore; so I was particularly anxious to reach if possible the summit of the Goddard Divide. A mile above this lake was another, and farther up still another, each in its miniature amphitheater. Finally I rounded the last spur of Mt. Huxley and entered a great basin at the headwaters. This was walled in on the south by the Goddard Divide, a magnificent range of peaks, covered by an almost unbroken sheet of snow. It curved around to the east also, and finally joined the Main Crest near Mt. Fiske. Off to the west the ridges were low, and over them towered the vast bulk of Mt. Goddard and all the black peaks of its neighborhood. Nearly the whole floor of the basin was covered with snow, except where two large lakes of the deepest indigo-blue, whose unruffled surfaces reflected the snowy peaks about, occupied the central portion. The day was perfect, without a cloud in the sky. I have seldom been so impressed by a mountain scene as by this,—possibly because I was alone, and so far away from the ordinary routes of travel.

On scanning the crest of the Goddard Divide there appeared to be one place far around to the east that looked like a pass. I had observed the creek-bed carefully during the morning's climb, and felt reasonably certain that a burro or sure-footed mule could be brought up this far. If a pass could now be discovered over the Goddard Divide, the problem of reaching the sources of the Middle Fork of King's River would be solved. So I took my way around the shores of these Crystal Lakes, and spent upwards of an hour in working out a way up to the notch. At exactly 12 o'clock the top was reached. The other side, as I had feared, broke down in the savage black gorges of the Middle Fork region, which were choked with snow and frozen lakes far down below. It would certainly be an impossibility to get an animal down anywhere along this part of the divide when the snow was deep, and even late in the season the success of such an undertaking would be very doubtful. Another thing which strengthens my opinion that the place could not be used as a pass is, that no signs of sheep are to be found there.

Far across the Middle Fork basin were piled up the great black peaks, a perfect wilderness which as yet is but imperfectly known. A few miles to the south rose a particularly inviting point, which certainly commands a peerless view. But time forbade an ascent this year, so I named it the Black Giant, and wondered how long it would stand as it has so far stood, an untrodden summit. I remained on the crest an hour, mapped as much of the country as I could, ate lunch, and just before leaving scrambled some distance down the King's River side to get a better look down the cañon. Then I started back,

and retraced my steps past the Crystal Lakes, the amphitheater of the Evolution Group, and stopped again at the lower end of the Evolution Lake to take a last look at its magnificent setting. How I missed my camera then!—for the long afternoon shadows streamed back from the jagged spires of Huxley and Spencer, making a perfect subject for a photograph. By 5 o'clock I was back in camp, and shortly afterwards Dr. Gilbert came in. He had spent the day in the amphitheater between the Evolution Peaks.

Next day we said good-by to a camp where every prospect except the mosquito pleases, took our way down Evolution Creek to its junction with the South Fork of the San Joaquin, and up this latter to the base of Mt. Goddard. On the morning of the 20th, Dr. Gilbert and I ascended Mt. Goddard, and renewed our impressions of the Evolution Group from this commanding point. The morning was cloudy, however, and became more so as the day advanced; so we were obliged to descend about noon and return to camp, where we found our companions just returned from a successful ascent of Mt. Humphreys. On the 21st they climbed Mt. Goddard, but fared even worse with the weather than we did, for it stormed furiously on them.

Finally we left the watershed of the San Joaquin on the morning of the 22d, took the Baird trail, and crossed over to the North Fork of King's River by Hell-for-sure Pass. Then we made our way across to the basin of Crown Creek, through Tehipite Valley, and over to the King's River Cañon by way of Granite Basin, following the route previously described.

SIERRA CLUB BULLETIN.

PUBLISHED IN JANUARY AND JUNE OF EACH YEAR.

Published for Members.

Annual Dues, \$3.00.

The purposes of the Club are:—"To explore, enjoy, and render accessible the mountain regions of the Pacific Coast; to publish authentic information concerning them; to enlist the support and co-operation of the people and the Government in preserving the forests and other natural features of the Sierra Nevada Mountains."

ORGANIZATION FOR THE YEAR 1904-1905.

Board of Directors.

Mr. JOHN MUIR (Martinez) *President*
Prof. A. G. McADIE (Mills Building, S. F.) *Vice-President*
Prof. J. N. LeCONTE (Berkeley) *Treasurer*
Prof. W. R. DUDLEY (Stanford University) *Cor. Secretary*
Mr. WILLIAM E. COLBY (Mills Building, S. F.) *Secretary*
Prof. GEORGE DAVIDSON (Berkeley).
Mr. J. S. HUTCHINSON, JR. (Claus Spreckels Bldg., S. F.).
Mr. WARREN OLNEY (101 Sansome Street, S. F.).
Mr. EDWARD T. PARSONS (University Club, S. F.).
(Vice Mr. ELLIOTT McALLISTER, resigned.)

Committee on Publications.

Pres. DAVID STARR JORDAN (Stanford University) . . . *Chairman*
Mr. ELLIOTT McALLISTER (Crocker Building, S. F.) . . . *Editor*
Prof. WILLIAM FREDERIC BADÉ (Berkeley).
Prof. WM. R. DUDLEY (Stanford University).
Mr. ALEX. G. EELLS (Crocker Building, S. F.).
Mr. E. B. GOULD (Mutual Savings Bank Building, S. F.).
Mr. J. S. HUTCHINSON, JR. (Claus Spreckels Building, S. F.).
Mr. EDWARD T. PARSONS (University Club, S. F.).
Prof. H. W. ROLFE (Stanford University).
Mr. WILLOUGHBY RODMAN (Bryson Block, Los Angeles).

Auditing Committee.

Directors McADIE, PARSONS, and DUDLEY.

Committee on Admissions.

Directors DUDLEY, OLNEY, and McADIE.

Committee on Parks and Reservations.

Prof. GEORGE DAVIDSON, *Chairman.*
Prof. W. R. DUDLEY, Pres. DAVID STARR JORDAN,
Mr. J. M. ELLIOTT, Mr. ABBOT KINNEY.

Committee on Outing and Transportation.

Mr. WM. E. COLBY, *Chairman.*
Mr. J. N. LeCONTE, Mr. EDWARD T. PARSONS.

REPORTS.

REPORT OF THE TREASURER.

SAN FRANCISCO, August 17, 1904.

TO THE DIRECTORS OF THE SIERRA CLUB.

Gentlemen—I beg to submit the following report of the finances of the Sierra Club during the year beginning May 10, 1903, and ending May 9, 1904:—

RECEIPTS.

(From Wm. E. Colby, Secretary.)

From dues, 1903-1904.....	\$1,935.00
From advertisements in BULLETINS Nos. 29 and 30....	780.00
From special \$1.00 assessment for Le Conte Lodge.....	602.50
From rent of deskroom to Rod and Gun Club.....	40.00
Sale of publications.....	6.00
Total receipts from Secretary.....	\$3,363.50
Balance on hand May 10, 1903.....	614.95
	<hr/> \$3,978.45

EXPENDITURES.

Publications and advertising expenses.....	\$1,466.10
Le Conte Memorial Fund—	
Amount levied by special \$1.00 assessment.....	602.50
Amount voted from Club treasury.....	100.00
Rent of Room No. 316, Mills Building.....	300.00
Clerical work and typewriting.....	201.90
Distribution of publications.....	192.15
Stamps and stationery.....	183.80
Trail work on Middle Fork of King's River.....	150.00
One half salary of Custodian of Yosemite Headquarters.	52.50
Printing of circulars.....	50.50
Public meetings.....	29.50
Furnishing of room in Mills Building.....	26.25
Freight on exchanges.....	17.45
Checks returned.....	6.00
Advertisements of Sunday walks.....	3.75
Miscellaneous	15.85
	<hr/> \$3,398.25
Balance on hand May 9, 1904.....	580.20
	<hr/> \$3,978.45

Very respectfully,

JOSEPH N. LE CONTE,
Treasurer.

REPORT OF THE OUTING COMMITTEE.

The Outing of 1904 will long be remembered as the most successful which the Club has yet undertaken. The number of the party was strictly limited to 150, as it had been found from past experiences that a larger number could not be satisfactorily provided for. The arrangements for transportation and commissary were as perfect as could be desired.

A preliminary camp was established in Yosemite Valley by the Club for two weeks, and many availed themselves of this opportunity to remain in the valley prior to the main Outing. On July 4th and 5th the entire party left Yosemite Valley and traveled to the Tuolumne Meadows, where a camp was established for nearly two weeks. Many interesting side-trips were taken from this permanent camp. Over one hundred of the party climbed Mt. Dana and fifty-three reached the summit of Mt. Lyell. Several ascended Mt. Ritter and visited the Lake Mono region. After breaking the main camp about twenty of the party made the famous knapsack trip down the Tuolumne Cañon to the Hetch Hetchy Valley, where they rejoined the main party, which had also traveled thence over the old Tioga mining road and the Hog Ranch trail. After remaining in Hetch Hetchy for two days the party visited Lake Eleanor on its way to the terminus of the Hetch Hetchy and Yosemite Valley's logging-train, which transported them to the town of Tuolumne, where a train of Pullmans was in waiting to convey them home.

The latter portion of the trip was remarkable because the only means of transportation possible was by pack-train, and the commissary and personal baggage of the entire party had to be packed in that manner over very rough trails during the last week of the outing.

We were very glad to have with us five members of the Appalachian Mountain Club and two members of the Mazama Club.

No accident of a serious nature occurred to detract from the pleasure of the trip.

Though the balance remaining after all disbursements was smaller than in former years, yet the financial arrangements for this Outing were the most satisfactory of any. The Committee have learned from experience that at slight increase of cost the Outing can be rendered much more enjoyable.

The Outing of 1905 inaugurates a departure, in as far as it will be the first one taken outside of California. The announcement of the trip to Mt. Rainier and Paradise Park will accompany this BULLETIN.

WM. E. COLBY,
J. N. LE CONTE,
E. T. PARSONS,
Outing Committee.

REPORT OF THE CUSTODIAN OF THE LE CONTE MEMORIAL
LODGE (1904).

The Le Conte Memorial Lodge was closed on August 18th, having been open during the preceding three months of the summer. The number of visitors to the lodge increased from the time it was opened till about the last of June, when the number was largest. At the latter date the number reached approximately twenty-five daily.

The past summer cannot, however, be taken as giving an accurate idea of the extent to which the lodge will ultimately be used. This is in part due to the fact that, being just completed, its purpose was not even known to residents of the valley. Not being mentioned in the guide-books (in accordance with which the ordinary tourist carefully plans his excursions), no one visited it unless he happened to notice the building in passing. More especially is the number of visitors during the past summer misleading, by reason of the attractions in other parts of the country, which reduced the number of tourists to Yosemite to a point lower than it has been for some years.

Of all who visited the lodge during the summer every one spoke in terms of unbounded admiration, both of the building itself and of the idea of which it is the embodiment.

The style of architecture met with the warmest approval. It was, however, suggested a number of times that the beauty of the interior would be materially enhanced if a style of rustic furniture could be secured more in keeping with the building itself.

The idea of a library was very favorably received. The empty book-shelves suggested the idea to many visitors. Nor were all of them content with merely expressing an opinion on the matter. Already a number of volumes have been received from various persons, while others have promised to send contributions. In fact, if the Club members take an equally active interest in the matter a very good library may be soon gotten together. Also, judging from the favorable responses received from those publishers whom I addressed, the lodge can be further supplied each summer, gratuitously, with the leading magazines, especially those of the Pacific Coast.

The collection of photographs in the lodge was in almost constant demand. The maps were also used to a very considerable extent, especially during the latter part of the season, when campers were most numerous. The supply of maps is, however, rather limited, and not adequate to the demands.

The lot on which the lodge stands was marked out during

the summer, and I understand steps are being taken to erect a stone wall along the boundaries. When this is done and the grounds are properly cleared off and planted with shrubbery the effect will be one of unsurpassed beauty.

Respectfully,

ROBERT L. McWILLIAMS.

STATEMENT CONCERNING THE PROPOSED RECESSION OF
YOSEMITE VALLEY AND MARIPOSA BIG TREE GROVE
BY THE STATE OF CALIFORNIA TO THE UNITED
STATES.

[Prepared by the Secretary of the Sierra Club under the direction of the Board of Directors, and adopted by said Board as its official expression of opinion.]

The Yosemite Valley and the Mariposa Big Tree Grove were granted by Congress, in 1864, to the State *in trust*, "to be held for public use, resort, and recreation." Little was known of the valley at that time and it was many years before it acquired a national reputation. At the present time it is world-famed, and is one of the valuable assets of the nation. Its loss or destruction would affect the entire United States, and every citizen of our country has a direct, vital concern in the welfare of the valley. In 1890 the much larger Yosemite National Park was created by Congress. This latter park includes in its very heart and surrounds on all sides the State Park.

There has thus been created an *imperium in imperio* which has already given rise to much friction. This deplorable state of affairs was emphasized about a year ago, when a fire was permitted to burn some of the finest timber along both sides of the northern boundary of the State Park. Both State and Federal officials insisted that the fire was outside of their respective jurisdictions. The Federal Government will always be hampered in its administration of the National Park as long as the State Park is under separate management. In order to reach the surrounding country its guardians must pass through the State Park, which is the natural base of operations for that whole surrounding region, and yet the Federal Government can maintain no permanent camp and base of supplies in Yosemite Valley because of the State control.

With these conditions existing, Congress is loath to make appropriations for the construction of extensive improvements which would really result in the improvement of State property at national expense. As a result, all the roads entering the National and State parks are private toll-roads, and tribute is

levied on every visitor to this region. This condition of affairs is most unfortunate, and would have been remedied long ago but for the existing state of dual government.

But once reinvest the United States with authority over this heart and center of the National Park and headquarters will be established in the valley proper. A system of telephone lines will be constructed radiating from this natural center and extending to all portions of the territory embraced in the present State and National parks. This will insure an effective system of fire protection and will increase the efficiency of the patrol and policing of the park many times. We have assurance that this will be done from President Roosevelt himself, also from the Federal Commission recently appointed to investigate conditions there, and from various other Federal officials.

Major John Bigelow, Jr., Superintendent of Yosemite National Park, in his recent annual report recommends:—

First:—The acquisition by the United States Government of Yosemite Valley, now owned by the State of California.

Second:—The purchase of toll-roads in the park leading to the valley.

Third:—The purchase by the Government of certain patented lands which are scattered over the park and constitute a considerable part of its area.

"The first of these measures," says Major Bigelow, "is believed to be necessary to secure from Congress an appropriation adequate to the improvement of roads and trails and of the park generally. It is a palpable anomaly for the valley to be under State government and the ground around it under the National Government. The valley would be rendered more attractive, and therefore financially more productive to the State, under National than it is under State government. The acquisition of the valley by the National Government is a matter, to be sure, in which the initiative must be taken by the State government, but I have good reasons to believe the idea that the National Government should own the valley has for some time been gaining in favor with the people of California."

2. The State is unable to properly care for Yosemite Valley.

Though the park has been under the control of the State for upwards of forty years, yet even the main stage roads on the floor of the valley leading to the village are in a deplorable condition. The accommodations provided for visitors have been inadequate for years. In the summer of 1903 the State Commissioners of the valley were, by reason of the congestion in accommodations provided for visitors, compelled to notify the various transportation companies not to allow any more tourists to enter the valley until the overcrowded conditions were relieved.

The State Commissioners have done as well as could be expected. They receive no salary. All the time they give to the affairs of Yosemite Valley must be sacrificed from the time devoted to their regular vocations. Very few have had any previous experience which would specially fit them for the discharge of their peculiar and onerous duties. The paltry ten or fifteen thousand dollars annually at their disposal is entirely inadequate for the needs of the park. It is with difficulty that even this amount is "squeezed out" of the State treasury. The State Commissioners are entitled to praise for what they have accomplished in the face of such adverse conditions.

3. In marked contrast to all this is the management of the Yellowstone National Park by the Federal Government.

The Yellowstone is in charge of Federal engineers and army officers, who have received a life training to qualify them to perform their duties. They all receive salaries, and devote their entire time to the care and management of the park. During the three years 1901-1903 Congress appropriated nearly seven hundred thousand dollars for the care and maintenance of the Yellowstone. The best of skilled engineers are employed in the construction of the roads and trails of the Yellowstone, and they are kept in perfect repair. The roads are broad highways, with steel and concrete bridges.

The hotels of the Yellowstone are large, commodious establishments, first-class in every respect, and with ample accommodation for its visitors.

4. State pride and sentiment is the strongest argument that has been advanced against this proposed change. But when analyzed it is found to be an entire misconception. If anything, sentiment should be all the other way. The Yosemite Valley is the property of the United States, and it has all along been the owner of the paramount title. It has, by Congressional act, allowed the State to take possession under a trust merely. To recede the valley only means to terminate the trust. The United States will not take the valley away nor close it up; but, on the contrary, will render it in every way more accessible and more enjoyable to visit, by reason of better accommodation for visitors. This sentimental argument savors too much of the "dog in the manger" policy to be considered seriously.

5. Our honored President, John Muir, who has devoted his life of activity to the best interests of our forests and natural scenery, has strongly advocated this proposed change for years. In a letter to the Acting Governor written last July he says:—

"The Yosemite Valley, in the heart of the park, and essentially a part of it, should, I think, be ceded to the Federal

Government and put under one management, thus insuring great improvement in present conditions through increased appropriations for roads, trails, and expert work on the valley floor, etc., thus increasing and facilitating travel, to the advantage of the entire country."—*Sacramento Union*, July 16, 1904.

6. President Roosevelt favors the recession. In an article entitled "Wilderness Reserves," written for the Forest and Stream Publishing Company shortly after his Western trip in 1903, reprinted in *Forestry and Irrigation* for July, 1904, he says:—

"As to the Yosemite Valley, if the people of California desire it, as many of them certainly do, it should also be taken by the National Government to be kept as a national park."

And in his recent message to Congress he makes the unqualified statement that, "the national park system should include the Yosemite and as many as possible of the groves of giant trees in California."

7. The Native Sons are strongly in favor of the recession. Grand President McNoble made this recommendation the strongest feature of his annual report.

8. A committee of the State Board of Trade reports that

" . . . the board has been impressed by the arguments made by the Native Sons of the Golden West in favor of recession to the Federal Government and the incorporation of the valley and Big Tree Grove with existing national park and forest reservations; also, that such recession will put an end to the inconvenience and risks of a divided jurisdiction now existing by reason of the State control of the valley and the Big Tree Grove, while each is surrounded by Federal reservations under the jurisdiction of the United States."—*San Francisco Call*, Sept. 14, 1904.

9. The Board of Directors of the Sierra Club, by a unanimous vote, authorized the appointment of this committee to urge such action.

10. The California Water and Forest Association adopted the following resolution at its annual convention on December 2, 1904:—

"Resolved, That the proposition to cede the Yosemite Valley back to the United States Government should receive the earnest consideration of the Legislature, to the end that more commodious accommodations may be provided for making such valley accessible to the general public, and we recommend such transfer."

11. The San Francisco Chamber of Commerce, that of Oakland and other cities, and many other influential bodies have also favored the recession.

12. The various newspapers throughout the State have almost without exception indorsed the proposed change in editorial comment. Not one dissenting opinion has come to our notice. Since these comments outline some of the arguments to be given in favor of the proposed change, and since they voice in a degree the sentiment of the people on the question, extracts from a few of these expressions of opinion are given in the Appendix hereto.

13. In conclusion, the past has demonstrated that the Yosemite Valley is of a national character, and every citizen of the United States is vitally interested in its welfare. The State assumed the burden of caring for it, and has expended its money for the benefit of every citizen of the United States. Forty years has proven that the State cannot afford to appropriate out of the funds at its disposal a sufficient amount to adequately care for this National Park. California has vital interests which concern her alone. She has forests to protect from fire; she has flood-water problems; she has a State Redwood Park; she has multitudinous interests which demand the expenditure of her own money. She can obtain no funds elsewhere for this work, for her citizens only are vitally affected by such expenditures. Her funds even now are far short of being adequate to meet the growing necessities of this great State. The Yosemite Valley requires the expenditure of at least one hundred thousand dollars every year for its proper care and management. A hotel is absolutely required to be constructed in the valley at a cost of at least two hundred thousand dollars. The State cannot afford to appropriate this amount.

But the United States is amply able to do this, and will, if given the opportunity. Therefore, the Yosemite Valley and Mariposa Big Tree Grove should be ceded to the United States, and thereby become a part of the National Park, to which it naturally belongs. The result would be the improvement of the valley and National Park by the construction of the best of roads, bridges, and trails. Ample hotel accommodations of the best quality would be provided. A telephone system for the entire park to guard against forest fires would be inaugurated. The patrol system of the National Park would be rendered far more effective and the valley itself placed under the same system, so that perfect order would prevail, no matter how great the number of visitors. The toll-road system would be abolished, and in all probability a splendid boulevard constructed up the Merced Cañon, which would reduce the time and expense of travel one half and greatly increase the comfort. This would attract

immense numbers of tourists from all parts of the world who are now deterred by the arduous nature of the trip and the lack of accommodation.

Each of these tourists would not only learn something of our great State, but would spend money in it. Few of us even begin to dream of the wealth that will some day be poured into California by the multitude of travelers who will annually come to enjoy our unparalleled scenic attractions. We want to hasten that day, and we trust that the members of the State Legislature will do their part in aiding to bring about this result by receding the Yosemite Valley and the Mariposa Grove of Big Trees to the National Government.

Respectfully submitted.

JOHN MUIR, *President*,
WM. E. COLBY, *Secretary*,
GEORGE DAVIDSON,
WM. R. DUDLEY,
J. S. HUTCHINSON, JR.,
J. N. LE CONTE,
A. G. MCADIE,
ELLIOTT MCALLISTER,
WARREN OLNEY,

*Board of Directors
of the Sierra Club.*

[APPENDIX.]

The Yosemite Valley is a wonder of nature of really national magnitude, and, like the Yellowstone Park, more fitly cared for by the nation than by any State. It also happens that the valley is actually inclosed within a much larger national park, and that conflicts of jurisdiction, involving serious results, have already occurred. The entire area of both parks constitutes one natural administrative unit, and it is believed that there is a growing feeling in Congress that such an arrangement should be made.—*San Francisco Chronicle*, Aug. 21, 1904.

If the reports from the mountains last summer were true, there is danger in divided jurisdiction, for it was said that when the most destructive fire that ever visited the vicinity of the valley was raging, the State Superintendent of the valley and the Military Superintendent of the park stood for days disputing whether the fire was on Federal or State territory, until it gained such headway that their combined forces could not master it until it had destroyed the fine forest extending from the Wawona Road to Glacier Point. A single jurisdiction would render such a catastrophe from such a cause impossible.—*San Francisco Call*, Nov. 18, 1903.

Major Chittenden, U. S. A., Chairman of the Federal Commission appointed to investigate and report on matters pertaining to the Yosemite National Park, said that in case the valley was ceded to the United States, and that the Government would agree to assume the care and management of the valley, a fort would be erected in the valley and a system of permanent telephone stations established to give proper protection to the forests from fire.—*San Francisco Examiner*, July 16, 1904.

It would be better for Yosemite if it were in the hands of the Federal Government. The Interior Department has control of the great Yosemite reserve encircling the valley for miles in all directions, and could, without extra expense, supervise the valley as well. Yosemite Valley really belongs to the United States. It should be looked upon as a possession of all the people, and should be made more easily accessible to all. It should receive the attention that the Federal Government could give it. More money would be expended upon it, more care devoted to it, and the expenses of visitors should be greatly reduced. It would become what it should be—a people's park.—*Oakland Enquirer*, July 28, 1904.

The failure of the State to provide for the proper accommodation of visitors to the valley has provoked a wide-spread demand that the reservation be receded to the Federal Government. Should the recession be made, there is no doubt that Congress would speedily provide the necessary accommodations as well as the other facilities to enable sight-seers to visit the valley and its surroundings under the most favorable conditions. The valley should be managed in the interest of the public to whom it belongs, and the convenience of the public should be the first consideration in making improvements.—*Oakland Tribune*, Sept. 14, 1904.

State pride may prevent the Legislature taking any such action, but there is no question that it ought to be done. The present system of divided jurisdiction paralyzes all effort for the satisfactory administration of this greatest of natural wonders. Since it is out of the question for the nation to cede the park to the State, the State ought to cede the valley to the nation.—*Fresno Republican*, July 16, 1904.

Under the absolute control of the United States Government the valley would have the best of care; money for every needed improvement would be forthcoming; it would be carefully policed, and the chances for graft or political jobs would be reduced to a minimum. The citizens of California would enjoy every right in the valley that liberal but well-enforced regulations would permit. It would be "our" valley still. Uncle Sam could not run away with it, and he would certainly be a careful and at the same time indulgent guardian. The fact that the Government is willing to accept the trust is fortunate, and those who appreciate the situation will doubtless hope to see favorable action by the next Legislature on Muir's proposal.—*Stockton Record*, July 12, 1904.

Up to this time State management has been reasonably efficient, but in State hands the administration of the park must always more or less be involved in politics, whereas the Government would be able to administer it through the army precisely as it administers the National Park in the Yellowstone country.—*Sacramento Union*, April 22, 1902.

There is a strong probability that the Yosemite Valley will be receded to the Federal Government by the State of California in the near future. Such a move would probably tend to a greater improvement of the park, as the expenses connected with keeping the great natural wonder open to the public are considerable and can be better sustained by Uncle Sam than the State of California. It would also tend to a quick abolition of toll-roads, make a trip to the valley fraught with less expense to travelers and in the reach of almost every one.—*The New Era*, Tuolumne, Cal., May 7, 1904.

The only arguments that have been presented opposing the transfer are along the line of State pride. When this is analyzed, however, it does not appear justifiable. The park must necessarily remain forever in California, and the retention of title by the State means merely the inadequate continuance of a struggle to meet the obligations demanded by the mag-

nitude of the situation and the traveling public. Public opinion largely favors the transfer.—*Los Angeles Times*, Nov. 9, 1904.

Yosemite is one of California's best assets. Every visitor it attracts from abroad is a source of profit to the people of this State, consequently the more sight-seers for the valley the more profit to Californians. The Government will do what the State has neglected to do, and do it better.—*Oakland Tribune*, Nov. 28, 1904.

"WHEREAS, The Yosemite Valley and the Mariposa Big Tree Grove are among the scenic wonders of the world, and the pride not only of California but of the whole Union; and

"WHEREAS, Their proper maintenance and improvement imposes upon the people of California a burden which, in view of the fact that said valley and grove are national exhibits, should be borne by the National Government; and

"WHEREAS, We believe that the National Government is alone able to undertake the expenditures necessary to properly improve said valley and grove by providing easy means of access, well-planned roads, trails, and other attractive features:

"Resolved, That the Board of Directors of the Chamber of Commerce of Santa Barbara County hereby desires to go on record as favoring the recession to the National Government of the Yosemite Valley and the Mariposa Grove, to the end that these natural wonders may receive the improvements which they deserve and the consequent attention from the world that they merit."—*Santa Barbara Press*, Dec. 3, 1904.

It is rumored that, moved by the admirable conduct and supervision of the Yosemite National Park, the State of California is likely, at the approaching session of its Legislature, to recede to the United States the smaller Yosemite grant of 1864, which is in the park but not of it. It is absurd and wasteful that there should be two jurisdictions within one boundary, and the people of California are to be congratulated on the prospect of this wise consummation, which Congress should facilitate by a prompt acceptance of the duty of caring for the whole of the Yosemite Wonderland.—*Century Magazine*, December, 1904.

The superintendent of the Yosemite National Park recommends that the Federal Government "acquire" the Yosemite Valley, which it once gave to the State of California. It is to be hoped that this most desirable end may be accomplished at the coming session of the California Legislature. The reasons for this course are abundant and conclusive. In the first place it is really, as its name implies, a "National" and not a State park. Its natural wonders are national in their magnitude, national in their interest, and national in the scale of expenditure required to make them accessible and protect them from impairment. They should be national, also, in their custody. This sentimental view would perhaps not be altogether conclusive were California rich enough to incur the expenditure involved in the ownership and protection of the park. Unfortunately this State is not rich enough, and practical considerations coincide with the sentimental in requiring that this wonderful valley be restored to the nation, which alone is able to care for it. From all sides come imperative demands for largely increased expenditures on the park with which this State is positively unable to comply. For the next quarter of a century the State will be compelled to tax itself to the full limit of endurance for purposes essential to our material prosperity or for the fulfillment of moral obligations which must take precedence even of so noble an object as the Yosemite Valley. We have recently acquired a State park in the Big Basin of Santa Cruz County, and the forest fires of last summer admonished us that if we are to preserve that magnificent body of timber for the enjoy-

ment of future generations we must incur heavy expense in protecting it from fire. The State, in fact, cannot afford for the present to expend any more money on parks than it will be absolutely compelled to expend to prevent the destruction by fire of the forests of the Big Basin. The Federal Government should, and probably will, if desired, assume charge of the Yosemite Park as it has of the Yellowstone Park, and the legislation required for that purpose by our Legislature should be enacted at the coming session.—*San Francisco Chronicle*, Nov. 28, 1904.

ACTION OF THE SIERRA CLUB ON THE PROPOSED CHANGE OF BOUNDARIES OF THE YOSEMITE NATIONAL PARK.

SAN FRANCISCO, CAL., August 23, 1904.

TO THE HONORABLE BOARD OF COMMISSIONERS APPOINTED TO INVESTIGATE AND REPORT ON THE BOUNDARIES OF THE YOSEMITE NATIONAL PARK.

At a recent meeting of the Board of Directors of the Sierra Club, the undersigned committee was appointed to communicate to your Honorable Commission the views of the board regarding any proposed change of boundaries of the Yosemite National Park.

I. With relation to the western boundary of the park, while we regret the necessity of reducing the area of the park at all, yet, influenced by the fact that there are such a large number of private holdings, we are therefore not opposed to having Townships 2, 3, and 4 South, Range 19 East, withdrawn from the park and added to the Sierra Forest Reserve.

To withdraw any larger area either to the east or north of the three townships mentioned would, we believe, be too great an encroachment upon the wonderful scenic features, for the preservation of which the park was created.

II. We strongly recommend that the northern and southern boundaries of the park be left unchanged (other than the slight change on the southern boundary which would be occasioned by the withdrawal of Township 4 South, Range 19 East, already mentioned).

There is no territory adjacent to either of these boundaries which does not include remarkable scenic features or afford protection to such. Of course we would favor any extension along these boundaries.

III. In relation to the eastern boundary of the park, we not only recommend that no territory be withdrawn adjacent to such boundary, but we also strongly urge the addition of the following territory to the present area of the park: The west one half ($\frac{1}{2}$) of Township 1 North, Range 25 East; all of Township 2 South, Range 26 East; and the west one half ($\frac{1}{2}$) of Township 4 South, Range 27 East.

We make this latter recommendation for the following reasons: The park is not sufficiently protected on the east along the territory mentioned from the invasions of sheep and other private interests, the territory mentioned includes very few private holdings, and finally it embraces many scenic features of such importance and of so remarkable a nature that they should be made a part of the National Park.

Respectfully submitted.

(Signed) JOHN MUIR,
J. N. LE CONTE,
WM. E. COLBY,

Committee on Yosemite National Park Boundary.

SAN FRANCISCO, CAL., August 28, 1904.

MAJOR CHITTENDEN, Palace Hotel, City.

Dear Sir—I herewith inclose a copy of the resolutions, or, rather, recommendations, of the Board of Directors of the Sierra Club relative to the boundaries of the Yosemite National Park. The original will doubtless reach you to-morrow.

In explanation of our attitude regarding the eastern boundary of the park, and our suggestion that the territory be increased in that direction rather than diminished, I will give some of the details which influenced us in arriving at the conclusions we did.

We feel that the grandest scenery in the whole park (excepting the Yosemite and Hetch-Hetchy valleys) is to be found in the Tuolumne Meadows and vicinity,—in fact, all along the eastern border of the park. It is this portion of the park which will become almost as famous as the two valleys named, and, excepting the scenery of the two valleys named, the western portion of the park contains nothing that can begin to compare with the magnificence and grandeur of the eastern portion. Professor Joseph Le Conte, in his "Journal of Ramblings in the High Sierra," John Muir in the *Century Magazine* for September, 1890, (Vol. XVIII, pp. 663-667,) and in his other writings, and the report of the Commission on Roads in Yosemite, Fifty-sixth Congress (Senate Document No. 155), all agree that this portion of the park is a perfect "paradise" as far as scenic features and camping attractions are concerned. Naturally, therefore, our Club is deeply interested in its preservation and in safeguarding it as completely as possible.

We have felt that this eastern boundary has in the past been too poorly protected. The meadows on the east approach so close to the park boundary (in one instance, at Tioga Pass, the meadow is even continuous with the meadow that extends within the park) that it is a simple matter for bands of sheep to slip

over the boundary unseen, as happened many times during this last summer when our Club was in the meadows. We had thought that if the boundary were extended farther east in the places suggested in our report, that it would bring this finest region of the park nearer its heart, where it would be afforded better protection. Sheep-herders and trespassers would have to travel some distance in order to reach these beautiful spots, and their presence detected before they could reach them, even if they would dare to enter within the boundaries so far and place their flocks in such open jeopardy.

You will also note that we have included much fine scenery in our proposed additions to the park, which is of such an attractive nature that it can well be included in the wonders and scenic features already within the park boundaries.

Regarding the mining phase of the eastern boundary question, I wish there were some way of adjusting it. While there are many claims, yet they can only cover a small area of the territory,—and would it not be possible to allow their owners to retain and work them, under restrictions, of course? Would it not be better to suffer some small detraction of this nature than to cut off the area contemplated and the magnificent scenery it embraces, and thus lose it to the park entirely? Having had a large experience with mines and mining,—for I have made the branch of the law relating to mines a specialty, which I have followed for some years,—I feel that very few of these claims will ever be exploited to any extent. It seems too bad that all this fine territory should be excluded simply to get rid of this mining question.

I have written the above merely by way of explanation of our present attitude relative to the eastern boundary. We all felt so strongly on the subject that I deemed it of sufficient importance to elucidate and give our reasons more in detail.

We shall gladly render any aid within our power or give you such information as we possess in relation to any matters affecting the park, if you will but kindly call them to our attention.

Very truly yours,

(Signed) WM. E. COLBY,
Secretary of Sierra Club.

SAN FRANCISCO, CAL., September 7, 1904.

MAJOR H. M. CHITTENDEN, Palace Hotel, City.

Dear Sir—Upon a further consideration of the proposed change in the eastern boundary of the Yosemite National Park, I feel at liberty to advise you that our Club would not be opposed to a change of the boundary of the National Park which

would be defined by the main crest of the Sierra, as you had suggested to me would be the report of the commission, provided that simultaneously with such change at least one tier of townships fronting all along on this proposed eastern boundary be included in an extension of the forest reserve. We feel that something is necessary along this eastern boundary of the park to act as a buffer against invasion, and if the plan suggested can be carried out it would probably be as effective a protection of the vital portions of the park as we could expect.

Very truly yours,

(Signed) WM. E. COLBY,
Secretary of Sierra Club.

NOTES AND CORRESPONDENCE.

In addition to longer articles suitable for the body of the magazine, the editor would be glad to receive brief memoranda of all noteworthy trips or explorations, together with brief comment and suggestion on any topics of general interest to the Club. Descriptive or narrative articles, or notes concerning the animals, birds, forests, trails, geology, botany, etc., of the mountains, will be acceptable.

The office of the Sierra Club is at Room 16, Third Floor, Mills Building, San Francisco, where all the maps, photographs, and other records of the Club are kept, and where members are welcome at any time.

The Club would like to purchase additional copies of those numbers of the SIERRA CLUB BULLETIN which are noted on the back of the cover of this number as being out of print, and we hope any member having extra copies will send them to the Secretary.

DEDICATION OF LE CONTE MEMORIAL LODGE.

The Le Conte Memorial Lodge in Yosemite Valley was dedicated by the Sierra Club July 3, 1904. There was a large attendance of Sierra Club members, owing to the fact that Yosemite Valley had been selected as the gathering-place for the 1904 Outing. The dedication exercises were simple, but very impressive. Wm. E. Colby, the Secretary of the Club, presided, in the absence of the President and Vice-President. Rev. C. T. Brown, of San Diego, gave the invocation. Professor A. C. Lawson, who succeeded Professor Le Conte as head of the Geological Department of the University of California, Mr. Alexander G. Eells, President of the Alumni Association, and Dr. G. K. Gilbert, of the U. S. Geological Survey, each delivered an address. Mr. Willoughby Rodman read a poem written for the occasion, and Miss Caroline Little sang Tennyson's "Splendor Falls on Castle Walls." Miss Harriet Monroe, of Chicago, read an original quatrain. Rev. Joseph Clemens pronounced the benediction. The exercises closed with the singing of "The Star-Spangled Banner." A bronze tablet appropriately inscribed was inserted in the walls of the building.

Professor Gilbert writes concerning the names of the rivers of the Sierras as follows:—

WASHINGTON, D. C., October 24, 1904.

SECRETARY SIERRA CLUB, SAN FRANCISCO, CAL.

Dear Sir—The members of the Sierra Club are well acquainted with the inconvenience of the system of naming which obtains for the primary and secondary branches of the rivers

draining the Sierra. The main streams were long ago named where they issue from the foothills. Tributaries of the third rank have been named and are being named as creeks, but divisions of the first and second rank are called forks, or forks and branches; and this system leads to such infelicities as the North Branch of the Middle Fork of the San Joaquin, for example. It seems to me desirable that individual names be substituted for many of the present descriptive names of forks and branches, and a system of individual names would doubtless grow up by slow accretion if no convention is attempted; but as a system of natural growth is likely to result in the adoption of many undesirable names, it seems to me better to have a considerable number of carefully selected names introduced by a competent organization. For this purpose it seems that the Sierra Club is best qualified. The only other organization which occurs to me as at all suitable is the United States Geological Survey, but that organization has wisely adopted the general policy of recording names in use and of proposing new ones only in cases of absolute necessity. You can readily understand that if it undertook the reorganization of nomenclature, it would be sure to rouse antagonism and its efforts would be defeated. Moreover, its knowledge of the range of local appropriate names cannot possibly be so full as that of a local organization like the Sierra Club.

I venture, therefore, to propose to the officers of the Sierra Club that the nomenclature of the rivers of the Sierra be deliberately and carefully considered, with the view to thorough revision.

It is proper to add that no future time would be so opportune as the present. Detailed mapping is in progress, and if the map-makers can have a good set of names to incorporate the result would be accomplished without friction or inconvenience.

I am, very truly yours,

G. K. GILBERT.

[It may be noted that, pursuant to this idea, Mr. Le Conte in his article in the present number has selected the name Evolution Creek for the Middle Branch of the South Fork of the San Joaquin River, and in his map of that region, also printed with this number, he has selected the name Piute Branch for the North Branch of the South Fork of the San Joaquin River.—EDITOR.]

ZAMBOANGA, P. I., May 17, 1904.

SECRETARY SIERRA CLUB, SAN FRANCISCO.

Dear Sir—I am returning from this trip to Mt. Apo before receiving the Club cylinder, but expect to visit it again in the fall.

I have been twice to the summit. I may plant the cylinder on Mt. Banajao, almost equally high, in the mean time and send for another.

Apo is not as high as its reputation. My aneroid readings ranged from 9,100 to 9,480 feet, the lower figure being nearer correct. The first ascent was made by two German naturalists, Koch and Schadenberg, February 22, 1882. Subsequent ascents were by an Englishman, Burke, in 1884; by Lieutenant Thomas and three other Americans, in 1900; and by two teachers, De Vore and Hoover, in 1903. Lieutenant Thomas copied the earlier signatures, and brought down the original as a proof of the ascent. Apo is reputed to be a volcano, but it is not as good a cone as Mt. Lassen; and the top, instead of a well-formed crater, is a small moor. The flora is limited and its affinities northern. My ascents were April 20 and 23, 1904.

This much may be of interest to the Club. I do not care to send more, as anything on the subject is foreign to the scope of the BULLETIN, as Mr. Hutchinson defined it to me last summer. The January BULLETIN has not been forwarded to me. Please change my address to Manila.

Sincerely yours,

EDWIN BINGHAM COPELAND.

ZAMBOANGA, P. I., November 10, 1904.

SECRETARY OF THE SIERRA CLUB, SAN FRANCISCO.

Dear Sir—The cylinder you sent me was deposited on the summit of Mt. Apo October 24th. The altitude is probably about 9,400 feet. My aneroid measurements are rather less, but Major Mearns' figures are a little higher. I have been up but three times, and am told he made six ascents in the course of about a month's work on the fauna.

The panorama is:—

About N. E., Mt. Roosevelt. (I did not see it this trip.)

N. 75° E., Davao.

N. 120° E., Malalag, a very picturesque coast.

S., Sarangani Bay.

S. 15° E., Matutan.

W., Cottabato.

Roosevelt is a peak of a great mountain called appropriately "The Punch Bowl"; another is known locally as McKinley; but as that name is in better use in Alaska, the whole mountain here may better be called Roosevelt. It is rather under nine thousand feet high and wooded to the top. Matutan is a very perfect vol-

canic cone, which I would estimate at seven thousand feet. It is near the head of Sarangani Bay, from which an army party is said to have started to ascend it, but to have been driven back by leeches, from a region where the subterranean rumbling was deafening.

You already have the record of ascents of Apo up to the time of my former visit. Major Edgar A. Mearns, accompanied by Fletcher L. Keller, visited the summit June 28th, their first time. And parties of soldiers from Davao made ascents September 25th and October 5th. Mr. and Mrs. Knudtson, of Cagayan de Misamis, went up as far as the sulphur vents, where also ended the "unica expedicion Español" in 1880.

Very truly yours,

EDWIN BINGHAM COPELAND.

Bureau of Government Laboratories, Manila.

It has been brought to the attention of officers of the Sierra Club that a certain firm in Southern California has been advertising "Sierra Club Mountaineering Boots." This was an unwarranted use of our corporate name. The firm, on having their attention called to the matter, said that it was an oversight on their part, and have agreed to discontinue the use of our name. The Directors have expressed a determination never to allow the Club's name to be used by others. Business houses desiring to get their wares before the membership of the Sierra Club, and before mountaineers throughout the country, are permitted to use the advertising columns of the BULLETIN after the correctness and qualities of their offerings have been approved. In this way our members have a proper protection against imposition, and our advertisers have a reasonable assurance of the Club's patronage.

PARTIAL BIBLIOGRAPHY, KERN RIVER OUTING OF 1903.

Sunset for October, 1903: An article by Victor F. Henderson.

Sunset for June, 1904: An article by E. T. Parsons.

Overland for January, 1904: An article by Miss Josephine Colby.

San Francisco Chronicle of September 6, 1903: Paper by E. T. Parsons.

San Francisco Examiner of September 6, 1903: Paper by Asahel Curtis.

San Francisco Bulletin of September 6, 1903: Paper by Hartly F. Peart.

Portland Oregonian of September 6, 1903: Paper by Miss Ella E. McBride.

PARTIAL BIBLIOGRAPHY, TUOLUMNE OUTING OF 1904.

- San Francisco Chronicle* of September 14, 1904: Paper by E. T. Parsons.
- San Francisco Bulletin* of September 14, 1904: Paper by Hartly F. Peart.
- Santa Cruz Surf* of October 6, 1904: Paper by Hartly F. Peart.
- Watsonville Register* of September 10, 1904: Article by J. E. Gardner.
- San Luis Obispo Morning Tribune* of September 13, 1904: Paper by J. E. Gardner.
- Los Angeles Express* of July 18-22, August 17, 1904: Papers by Willoughby Rodman.
- Los Angeles Times* of September 18, 1904: Paper by Claire S. Tappan.
- Portland Oregonian* of September 4, 1904: Paper by Miss Ella E. McBride.
- The Keystone of South Carolina*: Article by Miss Marion Randall.
- Out West* (Mountaineering Number), March, 1905: Articles by Willoughby Rodman, Prof. Wm. Frederic Badè, Miss Marion Randall, and E. T. Parsons.
- Other papers to appear later will be noted in the June BULLETIN.

A PACK TRAIL ON MT. WHITNEY.

The following from the *Monthly Weather Review* of September, 1904, is of interest to the members of the Sierra Club. Under date of August 1, 1904, Professor McAdie writes:—

I am anxious to expose a minimum thermometer on the summit of Mt. Whitney, so that the lowest temperature during the coming winter at this great elevation may be obtained. It will be remembered that some experiments were made in the winters of 1897-98 and 1898-99 at Mt. Lyell, elevation 13,040 feet. The minimum temperatures recorded during the two seasons were respectively -25.3° C. and -27.6° C. These were not the lowest temperatures recorded elsewhere in California during those winters.

It is thought we should make every effort to utilize the opportunity for study of atmospheric conditions in these high levels in view of the importance of the data in connection with new theories of formation and structure of cyclones and anti-cyclones.

I inclose copy of a letter received from Mr. G. F. Marsh, Lone Pine, Cal., relative to the completion of a pack trail to the summit of Mt. Whitney. This is a matter of some importance, as it will now be possible during July and August to send supplies to the summit of Mt. Whitney, elevation 14,515 feet, and so far as known the highest point in the United States, excluding Alaska.

Regarding the completion of the trail, Mr. Marsh (under date of July 22, 1904) writes to Professor McAdie:—

I am very glad to inform you that we completed the pack trail to the summit of Mt. Whitney last Sunday, the 18th. We had three pack-trains loaded with wood, and one saddle-horse. We had a large fire at night, and fireworks which were plainly seen at Lone Pine, who responded with a large fire and fireworks.

We had an ideal day to finish the trail. The weather was perfect. We were so anxious to get to the top that we never noticed the altitude. Most of the time it was bitter cold and windy. We were all fearfully sunburned; our faces were a sight and our lips almost black; but we would not give in. The pack-train had no difficulty at all in climbing the mountain. The trail is in good shape and parties are going over it every day. We shall try to find some means of keeping the trail in good repair.

I think the trail will be open until about Christmas unless early storms come, but it would not be safe to say this, as we do not know how early the snow will come this year. Last year there was very little snow. But I think parties will be safe until the end of October.

In a subsequent letter Mr. Marsh refers to a snowstorm on August 1st that compelled a party to turn back within a half-mile of the monument. "The mountains are covered with a light snow now, but it melts quickly."

On October 10th Mr. W. E. Bonnett, Assistant Observer at Independence, Cal., attempted to reach the summit of Mt. Whitney for the purpose of installing maximum and minimum thermometers. He was accompanied by a guide, with a pack animal and saddle animal. At an altitude of 10,000 feet snow began to fall. They proceeded about 1,000 feet further, when the high wind and dense snow, which was fast blotting out the trail, compelled them to turn back.

On July 26th, eight days after the completion of the trail, one man was killed by lightning at the summit during a sudden snowstorm, and two of his companions were rendered unconscious. The *Redland Facts* records a similar occurrence on July 24th on Mt. San Geronio, at an elevation of 9,500 feet, the first case of the kind in the history of the county. Referring to these fatalities, Professor McAdie says:—

The accidents have a scientific interest in that there are but few records of deaths by lightning in this State. But it should be noted that comparatively few people have been exposed to storms at high elevations. Mr. Byrd Surby was killed on the summit of Mt. Whitney, within fifty feet of the monument. It was snowing at the time of the accident. It is probably not well known that the variations in the electrical potential of the air during a snowstorm are almost as rapid and as great as those prevailing during a thunderstorm. In this present case

I am inclined to think that the electrical disturbance was not localized, but simply incidental to a disturbed field which extended well over the High Sierra, Inyo, Panamint, and Telescope ranges. Also the San Bernardino Range, and probably the mountains of Arizona. This condition lasted perhaps a fortnight.

RESOLUTIONS ADOPTED BY THE EIGHTH INTERNATIONAL GEOGRAPHIC CONGRESS, SEPTEMBER 13, 1904, AND PUBLISHED AT ITS REQUEST.

Rules for Geographic Names.—Local names are as far as possible to be preserved not only in those regions where already established, but also in wild regions. They should on this account be determined with all the accuracy possible.

Where local names do not exist or cannot be discovered the names applied by the first discoverer should be used until further investigation. The arbitrary altering of historical, long-existent names, well known not only in common use but also in science, is to be regarded as extremely inadvisable, and every means should be employed to resist such alterations. Inappropriate and fantastical names are to be replaced, as far as possible, by local and more appropriate names.

The above rules are not to be rigorously construed, yet they should be followed to a greater extent than heretofore by travelers and in scientific works. Their publication in periodicals as the opinion of the Congress will probably prove of great weight. Although in recent years many official systems of determination of geographic names have been enunciated, we have still evidence of the very slight influence which the wishes of the International Geographic Congresses exert over the decision of the official authorities.

To this geographical societies are urged to give wide publicity.

Introduction of the Fractional Scales of Maps.—The Seventh International Geographic Congress expressed the urgent wish that upon all charts, including those published by those lands still employing the English and Russian systems of measurement, along with the scale of geographic coordinance, that the scale of reduction should be expressed in the usual fractional form, 1 : x , and that the latter be added to all lists of charts covering land and sea, and requests the executive committee of the Congress to bring this decision to the attention of all governments, geographical societies, and establishments engaged in the publication of charts.

The advantage to be derived from the support of this resolution, which has its origin with the editor of Peterman's Mit-

theilungen, and the extensive dissemination of the resolution, is at once evident. In English publications a custom has arisen of adding a statement of the ratio 1 : x to the usually employed x miles to one inch. In America the custom has arisen of going even a step beyond this,—namely, the addition of the ratio of reduction has led to the direct application of the decimal system in the units of measure adopted upon the charts.

To this geographical societies are urged to give wide publicity.

The Decimal System.—The Seventh International Geographic Congress expressed itself in favor of a uniform system in all geographical researches and discussions, and it recommends for this purpose the employment of the metric system of weights and measures, as also the employment of the centigrade thermometric scale.

It is moreover highly desirable that there should always be added to statements of the Fahrenheit and the Reaumur scales their equivalent upon the scale of Celsius.

Similar is this question of the metric system, which reaches even more deeply than the former into the well-established customs of daily life, and has proved not without value in promoting international uniformity and simplicity. Although the metric system of weights and measures has made slow progress, and this alone through the portals of scientific work, its application to geophysics and geography has already made a fair beginning. In England a special organization, entitled the Decimal Association, has taken charge of the matter. The Commonwealth of Australia has intrusted the subject to a commission. We are without knowledge of the efforts in this direction thus far made in Russia.

To this geographical societies are urged to give wide publicity.

Standard Time.—Resolved, in view of the fact that a large majority of the nations of the world have already adopted systems of standard time based upon the Meridian of Greenwich as prime meridian, that this Congress is in favor of the universal adoption of the Meridian of Greenwich as the basis of all systems of standard time.

Publication of Photographs.—It is suggested by the lantern-slides shown by Mr. Siebers and by the photographs of Mr. Willis that it is desirable that in those and the cases of other exploring travelers photographs of geographical significance might be published and accompanied by short explanatory notes, so that they may form collections of representative physical features of different parts of the world.

BOOK REVIEWS.

EDITED BY WILLIAM FREDERIC BADÈ.

"BIRDS OF CALIFORNIA." Easily foremost among the books that have come to the reviewer's table is Irene Grosvenor Wheelock's *Birds of California*.^{*} Many will remember her admirable book, "Nestlings of Forest and Marsh," brought out by the same publishing-house two years ago. In it the author amply demonstrated her capacity for original observation by making a number of independent contributions to our knowledge of avian feeding habits. The same painstaking work has gone into this new product of her pen. The extent to which she has followed up her earlier observations is indicated by a statement in the preface "that the young of all macroshires, woodpeckers, perching birds, cuckoos, kingfishers, most birds of prey, and many seabirds are fed by regurgitation from the time of hatching through a period varying in extent from three days to four weeks, according to the species." If further observation bears out her conclusion, it will mean a considerable departure from current ornithological doctrine on this subject. But whoever chooses to indict Mrs. Wheelock for heresy will have to bring facts and not unsupported statements.

The scope of the book is indicated in the fact that it contains descriptions of more than three hundred common birds of California and adjacent islands. There are ten full-page plates and seventy-eight excellent drawings in the text by Bruce Horsfall. In the arrangement the author has followed the plan made popular by Neltje Blantchan, of substituting general divisions of habitat and color for a technical key. For purposes of ready identification this plan possesses unsurpassed advantages. The untechnical bird-lover especially will find this arrangement convenient. The individual biographies with which the author follows up the more salient scientific facts given for each species are models of easy and graceful writing. They betray at once the workmanship of a keen and loving observer who knows how to convey interesting information with economy of words and a peculiarly charming style. Adverting to the popular belief

^{*} *Birds of California*: an introduction to more than three hundred common birds of the State and adjacent islands; with a supplementary list of rare migrants, accidental visitants, and hypothetical subspecies. By IRENE GROSVENOR WHEELOCK. 12mo. 578 pp. \$2.50 net. A. C. McClurg & Co., Chicago. 1904.

that the burrowing-owl foregathers on friendly terms with prairie-dogs and rattlesnakes, she writes: "The owls hunt among the burrows for young mammals, and the offspring of the 'dogs' are doubtless a choice tidbit; the snakes crawl from hole to hole for the same purpose, but include owl-eggs and nestlings in their menu. So far as I have been able to observe, the 'dogs' are in terror from them both, but the sudden advent of a human intruder causes the three enemies to pop suddenly down the same hole with surprising unanimity."

Californians have long been interested in their native birds. The Cooper Ornithological Club is one of the most active in the country. But all signs indicate that we are on the eve of a more wide-spread awakening of popular interest in our feathered neighbors. The rapid rise of local Audubon Societies and Outdoor Art Clubs is part of the general movement in a State where Nature never locks the door against the student at any time of the year. Mrs. Wheelock's book not only comes opportunely, but comes with the *eclat* of real merit. It takes its place beside the more technical work of Mrs. Bailey as the best general introduction to the birds of California that has yet appeared. It only remains to add that the publishers deserve no little credit for the mechanical perfection they have given the book. Bound in flexible black leather and printed in clear large type on excellent paper, it is as tempting to the hand as it is pleasing to the eye.

"THE ROMANCE OF PISCATOR." Dedicated "to every one who has heard the Siren song of the reel," *The Romance of Piscator** makes its strongest appeal to the disciples of Isaak Walton. But a charming, though somewhat jerky, love-story which threads its way through many piscatorial adventures bids for appreciation among a larger circle of readers. Perhaps it is inevitable that a successful fisherman's story should be somewhat jerky and improbable; it is in the nature of the sport, and does not seriously detract from the reader's interest in the rapid movement of the story. It is apparent that the author is a true son of the rod and the reel. He knows the woods, the river, and the trout-pools not from hearsay, but from experience. Hence, in spite of evident shortcomings of the story, no woodsman can read the book without feeling again the thrill of long-remembered strikes, when the gray hackle danced temptingly down over the white riffles. And even the most ingrained Walton will find an added element of interest

* *The Romance of Piscator*. By HENRY WYSHAM LANIER. With frontispiece. 227 pp. \$1.25. 1904. Henry Holt & Co., New York.

in the bewitching, tantalizing, elusive girl who, after a great show of coyness, succeeds in landing Piscator with as much skill as ever he displayed in landing a savage six-pounder. To be sure the Peri says "Fancy!" and travels with "luggage," and consequently does things in an un-American way. But she is lovable and—real? There is room for suspicion that the story but thinly veils what often is stranger and better than fiction, and that the beautiful woman who looks out from the vignette tailpiece is the reality.

"FERGY
THE GUIDE." From the same publishing-house we have received *Fergy the Guide*,* by H. S. Canfield. The subtitle fairly describes the book as a collection of "moral and instructive lies about beasts, birds, and fishes," with this exception, that the lies are neither moral nor instructive. But any one who is looking for what Kipling would call "unmitigated misstatements" will find them here in profusion. Among the products of Fergy's imagination are porcupines that shoot quills at a target, a muskallonge that drinks whisky and swims amuck, a malodorous quadruped that imitates chickens and kills them by the hundred, a monstrous woodpecker, and a woodchuck orchestra. One cannot help wishing that Fergy had mingled a little more wit with his loquacity. If he is not allowed to do all the talking he will prove good company at an evening camp-fire. One might, in David Harum's phrase, say of *Fergy the Guide*: "If one likes that kind of thing, that's the kind of thing he would like."

"THE
PASSING
SHOW." Among those who added to the comradeship and good cheer of last summer's outing was Miss Harriet Monroe, of Chicago. Her "Ballad of Ritter Mountain" helped to make the last camp-fire at Lake Eleanor especially memorable. Although her recent book does not deal with outdoor life, we gladly make unsolicited mention of it here on behalf of her many friends in the Sierra Club who will find in *The Passing Show* † an interesting quintet of modern plays in verse. They are choice and serious in form and thought.

* *Fergy the Guide*, and his moral and instructive lies about beasts, birds, and fishes. By H. S. CANFIELD. With illustrations by Albert D. Blashfield. 12mo. 342 pp. \$1.50. 1904. Henry Holt & Co., New York.

† *The Passing Show*: five modern plays in verse. By HARRIET MONROE. 125 pp. Houghton, Mifflin & Co., Boston and New York.

FORESTRY NOTES.

EDITED BY PROFESSOR WILLIAM R. DUDLEY.

THE GREAT FOREST FIRE. The week from Sunday, September 4, to September 11, 1904, was a week of the highest temperature and of the most extensive and disastrous forest fires on record in the Santa Cruz Mountain region. On Wednesday and Thursday, the hottest days, the thermometers registered from 106 to 110 degrees Fahrenheit in many places. No forest fires existed on Saturday, the 3d; on Sunday one appeared on the side of Ben Lomond Mountain, west of Ben Lomond; on Monday a fire broke out on Zeyante Creek; on Tuesday a fire started above the electric-power works on Big Creek, spread with great rapidity, and burned to death one man; on Wednesday fires broke out in all directions above Santa Cruz and Soquel, but the greatest of all near the mills at the head of Pescadero Creek. The latter spread southward for nearly ten miles, entered the California Redwood Park Wednesday night, and by the Monday following, when it was under control, had burned over one third the State's lands, many miles of private property, consumed perhaps a half-dozen homes, including one valuable summer residence, and had made all the roads in that part of the county impassable. Eye-witnesses viewing the basin of San Lorenzo River and its tributaries and the Ben Lomond and Butano ridges on Thursday night represent the scene as appalling. The writer, pursuing his way toward the park on horseback, on half of Friday night, saw the silhouettes of the great redwoods and Douglas spruces on the Butano Ridge miles to the southwest one by one burst into flames that shot to the tops like a flash. The trees then disappeared in the lurid smoke or stood as columns of fire. The air was clear to the north, and the appearance of the great volumes of smoke and flame rolling up from the forests of the ridge was like the eruption of a volcano at night.

Fortunately the State park suffered less than many other virgin tracts of timber in that region. By strenuous efforts the warden and the fire-fighters confined the fire largely to the cut-over and chaparral—the "thrown in" portions of the purchase. The beautiful forest about the Governor's camp and the larger and more valuable part of the park west of the East Waddell remains untouched by fire. Most of the redwoods which were

defoliated by the fire will recover their original appearance after the lapse of ten to twenty years, and the burned area can be brought in time back to its former condition, probably much improved if sufficient appropriations are available. But the simple cost of fighting to restrain this fire has cost the State above one thousand four hundred dollars. It would have cost two thousand dollars but for the generous donation of the Southern Pacific Company of the services of its employees, amounting to about five hundred dollars, and the free use of their time given by the thirteen Stanford students, who spent two days and three nights in this business. The State's appropriation for the park for 1904-1905, aside from the Warden's salary, is three thousand five hundred dollars.

The lessons of this fire are pointed and plain. Until the State has efficient forestry and forest-fire laws supported by public opinion it should purchase no more forest land for parks. When the "hot spells" come in August or September, with the wind northeast, and the consequent absence of dampening sea-fogs at night, lumbermen should be required to suppress all fires and watch their property closely, and the State should increase its patrol service sufficiently to discover and suppress in the first stage any outbreak of fire in the mountains. The ranchmen and the owners of summer homes in the mountains are of as much importance as permanent property-holders as the lumbermen, and the law should not fail to protect them.

**THE STATE
FOREST BILL.**

This bill has been "prepared by the Bureau of Forestry of the United States Department of Agriculture, in co-operation with the State of California, in accordance with an act of the California Legislature, approved March 16, 1903, which provided for the formulation of a State forest policy." It is "An Act to provide for the protection and management of forest land within the State of California," and will be introduced into the present Legislature. It provides for a State Board of Forestry, consisting of the Governor, the Secretary of State, the Attorney-General, and the State Forester, to be appointed under this law, which shall manage all State Parks and woodlands, and have the power of enforcing all forestry laws on private lands. It provides for co-operative work with counties, towns, or private parties interested in forest lands; for a corps of assistants and their duties; for special assistance by citizens; for fire patrol; for prosecutions and penalties; for restrictions in the use of fire, of engines, etc., in forest lands during the dry season; for clearing along roads and railroads; and finally it provides that moneys paid

into the State treasury for penalties shall be held for forest protection.

In the main it appears to be a good law. It is weakest in the most important provisions, fire patrol and restraint on the present methods of lumbering in the dry season. It is thought, however, that the great expense involved in better provisions and present public sentiment do not warrant an ideal law in these directions. An excellent feature is the evident intention to keep the service free from politics. Criticism has been made on section eleven, concerning "assistance and compensation of citizens in fighting fires," which provides that "fire-wardens shall have authority to call on able-bodied citizens, between the ages of sixteen and fifty years, for assistance in putting out fire," and that "compensation for services in fighting fire shall be at the rate of twenty cents per hour." It is argued that this will induce irresponsible parties to set fires, notwithstanding the heavy penalties involved, in order that they may obtain wages for perhaps trivial labor. The writer believes the point well taken. He would modify this provision, would make the fire-patrol much more strict, perfect the plans for *preventing* fire, and simplify the machinery for putting out big fires. Indeed, a great forest fire cannot be controlled by men unaided by favorable atmospheric conditions. He would call attention to another weakness; the State may find itself under this law paying for the fire-fighting on the lands of great timber-owners, when the latter should be made to patrol their land and suppress their own fires.

It may be said that the Sierra Club ardently desires a good forestry law; and these suggestions are made not as against the law, but to meet objections, and therefore bring to its support as much public opinion as possible. A forestry law along the simplest lines is very much better at this time than no law, and the support of right public sentiment is the best of all.

YOSEMITE PARK.

A bill passed the Senate on December 12th, and the House on December 19th, cutting off a large amount of land from the Yosemite National Park, returning it to the Sierra Forest Reserve. It was done to promote mining, and particularly the interests of two small railroads which desire to build electric and other lines into or near Yosemite Valley. The bill cut off considerable groves of sugar pines surrounding both the Tuolumne and Mariposa big trees, besides excluding some big trees from the park. It entirely ignored the report of a commission appointed last year to readjust the lines of the park; and for that reason the President has declared his intention to veto the bill unless it is reconsidered and passed accord-

ing to the recommendations of the commission. The latter is composed of Major H. M. Chittenden, United States Army Engineer; R. B. Marshall, United States Geological Survey; and Frank Bond, Chief of Drafting Division of the General Land Office. The members are entirely impartial and the best possible choice; R. B. Marshall has been in charge of the Geological Survey's mapping of the Yosemite region for some years, and is perfectly familiar with its topography and forests. The matter may be considered quite safe with President Roosevelt.

It may here be remarked that when the bill for the establishment of a national park at the Vancouver Pinnacles in San Benito County comes before Congress, as it is likely to do this winter, it will be acted on by Congress and the President in accordance with an expert report from the United States Department of Agriculture. The examination and report were made at the suggestion of two members of the Sierra Club.

YOSEMITE VALLEY. The proposed recession of Yosemite Valley to the United States and the incorporation of it with the Yosemite Park surrounding it are likely to meet with opposition, possibly with defeat. Final action in the matter hinges on the attitude of the State Legislature, members of Congress having declared their intention of being guided by the recommendation of the Legislature. Already violent partizanship has been shown by certain newspapers, and the subject seems likely to leave the domain of common sense. Recession to the United States, and a termination of the trust on the part of the State, is very desirable, and has been unanimously approved by the Directors of the Sierra Club. In opposition to it, the emotion chiefly appealed to is that of "State pride." This might be reasonable if the pride of the State for its noblest single scene could be injured by the proposed transfer of management. Few travelers and visitors, however, know or care whether it is administered by the State, the United States, or a private individual, so long as it is preserved in a condition suitable to its natural grandeur. That it is in *California*, everybody knows and remembers, and that to see it one must come to California. The United States, if possessor of it, would be a shadow as compared with California in the recollection of any visitor. Friends of recession should remember to always insist that the present means of approach are poor and entirely inadequate; that the State will not build good roads over lands it has no title to; that no individual will build good and free roads; that the United States, not owning the valley, has no interest in building good roads to it; that if the United States is put

in possession of the valley it will probably make appropriations for the adequate accommodation of travel on a scale similar to those for the Yellowstone National Park, and far greater than this State can ever make.

**PUBLIC LAND
FRAUDS.**

As evidence of the difficulty encountered in prosecuting offenders against the public-land laws, we have the fact that no conviction has yet been secured of either Benson or Hyde, although President Roosevelt's administration has been resolutely engaged for considerably above a year upon these matters. It has been more fortunate in Oregon; four minor parties—Puter, McKinley, Tarpley, and Mrs. Watson—having suffered conviction, and in this downfall the first-named confessed to facts which led to the indictment of two important personages—United States Senator John H. Mitchell, of Oregon, and former Commissioner of Public Lands Binger Hermann, now a Representative in Congress. The cases will not be decided for some time, but the courage and impartiality of the Administration in bringing to judgment members of its own political party is beyond praise. Rumors of extensive frauds in Idaho and Montana are now current, and the Department of Justice is about to begin investigation.

**AMERICAN
FORESTRY
CONGRESS.**

A congress of five hundred delegates, the first of its kind, bringing together the forestry, lumber, grazing, mining, and irrigation interests, under the leadership of forestry, was held January 2-6, 1905. The very unusual honor of an address by the President of the United States was conferred upon it, while his Secretary of Agriculture presided over its deliberations, and many distinguished men attended its sessions. The range of subjects under discussion was wide, but the evident aim of the congress was to bring all the varied interests into co-operation and make forestry methods and work helpful and practical to many business interests and a part of the life of the nation. Secretary Wilson said it was desired that forestry should not be considered outside of general industrial life, or a purely Governmental enterprise. The President's address was one of his best and most effective. It deserves to be read as a whole, but perhaps the following quotation will give the central idea of the speech: "The great significance of this congress comes from the fact that henceforth the movement for the conservative use of the forest is to come mainly from within, not from without; from the men who are actively interested in the use of the forest in one way or another,

even more than from those whose interest is philanthropic and general. The difference means to a large extent the difference between mere agitation and actual execution." This is what we have looked forward to—namely, the time when public sentiment in favor of a rational treatment of the forests shall be thoroughly awakened, and the great industries which depend on the forests shall come to be as much their true friends as the philanthropist. The President in this speech as well as in his annual message continues to urge the transfer of the care of the forest reserves from the Land Office to the Bureau of Forestry; and it seems to us that this event, when it comes, will mark rather than the Forestry Congress the practical ascendancy in this country of true forestry. It will exert a tremendous influence on the attitude of the dependent industries.

